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ABSTRACT

The book, over half of which consists of appendixes, discusses the identification of gifted and talented students and presents some suggested identification procedures. Topics addressed include factors basic to gifted performance, the interrelationship of identification procedures with curriculum and staff, the relationships between conceptions of giftedness and identification procedures, the benefits of early identification, the identification of the disadvantaged gifted, talent identification, and the handicapped gifted. Identification procedures recommended include individual intelligence tests; group tests; the use of summary matrices; and nomination by parents, peers, and teachers. The 18 appendixes include various scales, profiles, and checklists having to do with the identification of the gifted and talented. (DIS)

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SUGGESTED PROCEDURES FOR THE IDENTIFICATION OF THE GIFTED AND TALENTED

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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A HANDBOOK COMPILED BY THE
NEW YORK STATE EDUCATION DEPARTMENT

Acknowledgments

The materials in this handbook have been written and compiled by Grace Lacy, Office of Urban School Services, New York State Education Department, 2 World Trade Center, New York, New York. The contents include both original material written specifically for workshops conducted by the Department and draws heavily upon other publications produced in recent years by various federally-funded projects. Appreciation is expressed to the original authors for all materials that have been reproduced or adapted for use at the workshops. Readers are encouraged to refer to the original publications wherever possible for full treatment of the subject matter. An annotated listing of some testing instruments is provided to encourage school districts to make a collection for staff review and use as rating scales are selected for use in the identification of gifted and talented students.

This handbook may be used in conjunction with the New York State Education Department's publication, Guidelines for the Identification of the Gifted and Talented, which was distributed to schools in June 1978. Where that publication presents one theoretical model and an example of how it may be used, this handbook contains other types of information and a variety of models, instruments, and resource material to help in implementing identification procedures for a wide range of gifted/talented/creative pupils.

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SOME SUGGESTED PROCEDURES FOR IDENTIFICATION OF THE GIFTED/TALENTED

In planning identification programs for the gifted/talented it is necessary to define giftedness; The USOE defines this trait as follows:

> "Gifted and talented children are those identifed by professionally qualified persons who by virtue of outstanding abilities are capable of high performance. These are children who require differentiated educational programs and/or services beyond those provided by the regular school program in order to realize their contribution to self and society..."

The abilities either potential or demonstrated to be included are general intellectual ability, specific academic aptitude, creative or productive thinking, leadership ability, ability in the visual or performing arts, and psychomotor ability.

However, local definitions of giftedness will vary from community to community depending on what levels of ability and special talents are to be included, allowances made for environmental deprivations, the number of children served as well as other factors. Of course, such local definitions should only be written after proper study and consideration of the literature, while keeping in mind the definition of gifted/talented as proposed by the USOE.

Identifying gifted/talented children is not only of the utmost importance to these individuals themselves so that they may be given opportunities to realize their potential, but it is also of prime import to the nation. It is because of the contributions of the gifted few that civilization has moved forward. This fact is well-recognized in countries where gifted youth are considered a natural resource to be assiduously sought out, identified, and given special education. A brief review of the many life-enhancing ideas, inventions and creations of the gifted should make obvious to all the advantage of the identification and full development of the special abilities and talents of the gifted, even from a selfish point of view. The public should insist on such a program as a major educational priority.

The gifted/talented have certain unique characteristics which differentiate them from the rest of the population. Consequently, they require a differentiated education to meet their special needs. However, a recent survey conducted by the USOE (1971) revealed that only a small percentage of our gifted youth are identified, and only 4% of those identified are receiving special programs. Of the schools replying to the survey, 58% reported that they had no gifted youth. In a time of extreme emphasis on the conservation of natural resources, our nation's schools continue to be unaware of the needs of the gifted and fail to nurture the talents of those who are identified. Such policies result in an unconscionable waste, not only of human potential but of our most precious national asset, our gifted and talented youth.

The gifted often will not identify themselves. Frequently, they will try to minimize their own abilities in order not to be considered different. The common belief that the gifted need no special help is well refuted by statistics that indicate large numbers of such students drop out of school or fail to go to college. Terman regarded the gifted as the most retarded group in education when mental age and chronological age are related to their actual school experience.

Particular injustice has been done because of apathy toward certain minorities. It must be well understood by educators that all populations have percentages of gifted/talented individuals and that it is their duty to seek out and nurture such potential.

The seeming neglect of the gifted/talented by the schools is intensified by the time lag between research findings about the range and diversity of mental activities and their implementation into classroom practice and school polices.

BROADENED CONCEPTIONS OF INTELLECT

(Note: Although New York State has adopted the USOE definition, it should be noted that this document does not purport to subscribe to any one definition of giftedness or any one method of identification of gifted youth. Its aim is to represent a broad overview of the field and to suggest some useful directions for action. The scholars quoted below are cited because of their contributions to broadening the definitions of giftedness beyond the narrow range set by Terman.)

An enormous amount of psychological research has gone on in the past 30 years which is changing our conceptions of the intellect from Thurstone's single "g" factor to a wide range of intellectual abilities. Researchers such as J.P. Guilford have provided us with a broadened concept of the nature of human abilities. Foremost among the newer conceptions is Guilford's Structure of Intellect model which encompasses more than 150 different intellectual abilities.

Taylor suggests a grouping of talents based on the world of work needs in areas such as creativity, decision-making, planning, forecasting and communications. He points out that if we limit ourselves solely to academic talents only 10% of the population will fall into the gifted class, and only 50% of the students will have a chance to be above average (above the median). On the other hand, if we measure youth across several different talents, the number of those individuals with high potential will increase tremendously. If we use other "talent ladders" as well as the academic one, not only will different students excel in these different talents areas, but more students will have the opportunity to excel. To discover these talents we need to use a variety of aptitude tests as well as those which measure scholastic ability. In addition, new types of tests need to be devised to identify these newer types of talents. Educators must be aware of these enlarged conceptions of giftedness and talent as well as their curriculum implications in order to provide for adequate program planning and development.

NEW CHALLENGES IN EDUCATION

Meeting the unique, varied and complex needs of the gifted/talented is a new challenge now facing American schools. The rising tide of consumerism in education is now demanding an appropriate education for every child. Programs for the gifted/talented are now beginning to be considered a basic right of gifted individuals, not merely an extra frill to be offered or cut off arbitrarily. Schools must provide such programs, and in so doing three important tasks face them: (1) the determination of policy, (2) the proper identification of the target population, and (3) vastly upgraded professionalism through staff development. All of these tasks are interrelated and intertwined. All educators, whether or not they are involved in the identification processes, must become knowledgeable about newer conceptions of special education for the gifted and talented.

IDENTIFICATION OF POTENTIAL SUCCESS AND FACTORS RELATED TO ITS REALIZATION

In identifying the gifted it must be remembered that we are dealing in terms of potential and only, in some instances, with current achievement. Judgment of actual products is possible with older children, but the young child's productivity is usually not yet proven. Moreover, different traits and abilities show up at different times. In order to understand the true nature of the kind of giftedness which results in theoretical and practical discoveries of knowledge or other social benefits, it is essential to explore the research regarding those gifted persons who have made outstanding contributions.

To determine the factors which tend to predict such success Michael Wallach studied the school records of men of achievement who were listed in Who's Who. His research revealed certain key factors which influence success in life.

1. Mental Power, (general intelligence), is the key factor but not the only one. However, it is a threshold measure. Any kind of success requires a certain floor of intelligence - an IQ of at least 115 or 120. Below this point success is unlikely. Other gifts and attributes must be based on this floor of intelligence.
2. Special aptitude in art, music, dance also opens doors to success if they are properly developed.
3. Non-intellective factors, (sometimes called personality factors) which have nothing to do with mental factors, but are crucial in talent development, are requisites. These include persistence on the job, task commitment, ability to deal with ambiguity, ability to resist premature problem closure and others which involve social types of talent.
4. Environmental factors greatly influence chances of life success. An environment that stresses excellence and productivity has a beneficial effect. Environments which subvert or undermine creativity and useful forms of social development deter success..
5. Chance factors: Innumerable chance factors such as the ability to make the right social or business connections, to be in the right place at the right time, and many others also greatly influence success..[1]

[1]Wallach, and Wing, C. The Talented Student, New York. Holt Rinehardt and Winston, 1969.

While the above factors influence the success of anyone, gifted or not, they should be taken into consideration when identifying the gifted/talented and when programming for them.

FACTORS BASIC TO GIFTED PERFORMANCES

In identifying the gifted it is necessary to look for:

1. Cognitive abilities - a threshold of mental power, powers of abstract thought, the ability to analyze, synthesize, judge and use higher level thought processes.

2. Personality characteristics which fall into two major types -- (a) motivational characteristics such as wide-ranging interests, task commitment, long attention span, persistence, concern over social problems, and (b) leadership characteristics which involve the ability to persuade and dominate others, and self-confidence. As noted above, personality factors greatly influence how well abilities or talents are used.

3. Creativity is a special quality involving such traits as originality, fluency, flexibility, imagination, and the ability to define and creatively solve problems.

Not all of the gifted have equal amounts of abilities in each of these three areas. Some who have cognitive ability and creativity may lack the self-discipline to make real contributions. Considerations of these clusters of characteristics is basic to curriculum construction in order that the desirable traits be developed and enhanced. Guidance in overcoming negative characteristics is needed. It is also important to consider the environmental factors, particularly in relation to the disadvantaged in order to overcome deterrent forces and to sufficiently compensate for deprivation in the environment.

While the school cannot control chance or overcome all deterrent environmental influences, there is much that it can do to improve self-concept, widen horizons, to raise aspirations, and to provide for healthful development.

WHO ARE THE GIFTED? HOW CAN THEY BE IDENTIFIED?

Traditionally, the term "gifted" has been applied only to students of exceptionally high academic ability and achievement with an IQ of 130 or more. In recent years, however, researchers have asserted that the IQ as an operational definition of intelligence represents a somewhat limited sampling of the total spectrum of intellectual ability. This revised conception has broadened the range of talents and intellectual abilities to include such multidimensional aspects as social leadership, creative problem solving ability, and the creative or performing arts. Today the gifted/talented are considered by the USOE definition to include:

The Highly Gifted

The term "intellectually gifted" is now usually reserved for that narrow band of one type of gifted, --- albeit, a very important one. According to the followers of Terman, highly gifted students have an IQ of 140 or more, are alert, have keen powers of observation, show a passionate desire to learn, ask endless questions, have wide interests, and are eager

to excel. They get high marks, have high verbal ability, show independent judgment, and are keen thinkers. They have unusual powers of concentration, are dependable, and produce well. (See detailed list of characteristics of the gifted in the Appendix)

According to Tannenbaum, the highly gifted have the ability not only to be intelligent consumers of knowledge but also the potential for the production of new knowledge.[2] These students usually stand out because of their high test scores and achievements. But, there are some of the highly gifted who do not manifest their ability in school. Rating scales and checklists can help parents and teachers to learn more about the characteristics of the highly gifted in order to better recognize gifted underachievers.

The Gifted

Renzulli states that the gifted are those who have (1) above average intelligence but not necessarily an extremely high IQ, (2) task commitment (are willing to work long and hard to achieve goals), and (3) creativity (the ability to find and creatively solve problems). Tannenbaum points out that a student with an IQ of 115 or 120 can have other qualities of task commitment, interest, ambition, and creativity which may enable him to achieve as well as or better than those with a much higher IQ who may not have desirable personality traits.[3] This type of student may be difficult to identify since she/he may not do well on all types of tests. However, such students should be placed in programs on a trial basis where they can have the opportunity to display potential. In addition to tests, such students may be identified by teacher and parent recommendations, checklists and rating scales, or by their products. (See Appendix)

The Academic Gifted

Giftedness in any individual is not the result of a single factor but of a combination of intellectual and other traits. A child may be highly gifted in math but only average in other subjects, perhaps because of lack of interest in them.

SAT scores reveal that in the past, many girls have done less well in math than boys, perhaps because of sexist social conditioning, but they tend to excel in language arts ability. Such students can be identified from achievement and aptitude tests. They should be given special help in their areas of interest while being retained in regular groups for the rest of the curriculum. Of course, they should also have enrichment which may broaden their horizons and range of interest.

The Gifted Underachiever

Many gifted children do not do well in school because they are bored with programs that do not challenge them, or because they are creative nonconforming types who develop personality factors which irritate teachers or

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[2] Tannenbaum, A, Lecture at Columbia University Teachers College Summer Institute, 1978 New York.

[3] IBID.,

others. They may be considered hostile, antisocial, or just odd and different. Some gifted students, particularly the disadvantaged, may suffer from deficits in basic skills or have language or behavior problems. These students are extremely difficult to identify. They may not do well on tests, may have developed bad work habits, may be hostile, or suffer from emotional disturbance or a variety of other problems, because their needs are not being met.

Checklists and rating scales, as well as information from parents and peers about student products, and individual intelligence tests should be used with this type of student. Such children should not be kept out of programs but should be helped with their problems while being stimulated with a more challenging curriculum which meets their special needs.

The Talented in the Arts

Talent in the arts is highly related to creativity. Some of the talented can become fine performers who can entertain an audience. They tend, however, to merely reproduce material which has been created for them by others and do not themselves produce original works. They can play a Mozart concerto but not compose one. The highly talented may or may not be good performers, but they have creative ability which enables them to produce original ideas, conceptions and works.

Unfortunately, we know little about how to identify talents in the arts or how to develop them. Persons trained in the field in question must assume the tasks of identification and talent development. Usually, these should be educator-artists because although "artists in residence" may provide good role models and sources of inspiration for youth, they often do not have sufficient understanding of child development and other special knowledge possessed by those also trained in education. Of course, at the high school level, professionals of high expertise should be used for identification procedures.

Psychomotor Skills

Students with unusual psychomotor skills are able to express creativity through movement activities as in dance or sports. Fine motor skills and high intellect is a combination which can produce a surgeon or a sculptor. Exceptional gross motor skills are necessary for outstanding dance or sports performance. We know little about how to identify such talent except by watching performance. However, if teachers and parents are alerted to the characteristics of those with talents in the arts areas they are more likely to identify them early. Early identification and training is crucial in some arts fields such as ballet. Those who aspire to become concert pianists or violinists must also be discovered very early in order to have time for the intensive training necessary. Identification and training of talents in these areas is best done by experts in the various arts.

Psychosocial Talent or Leadership

Leadership is composed of initiating, sustaining behavior which involves ready assumption of responsibility in directing and coordinating within a dynamic situation to reach desired goals. It also involves group sociability

which in turn involves self-confidence in communications ability, the ability to work in group activities as well as to influence others. Individuals with leadership talent may or may not have an exceptionally high IQ, but it is from this group that many politicians and those in government come. Often, such leaders achieve positions of great power and influence so it is vital that they be identified early and given the kind of training which will enable them to exercise power wisely and humanely. Those with leadership potential also need training in creative problem solving and should be exposed to curricula which deal in depth with social problems and how to find acceptable solutions to them.

Unfortunately, we know little about how to identify leadership at an early stage. In addition to intelligence, achievement and aptitude test scores, peer nomination, and sociometric devices reveal useful information. Often students are better able to identify their peers with leadership potential than are parents and teachers.

Creative Thinking Ability

Interest in creativity is rapidly growing in American education because of the research of such scholars as Getzels, Jackson, Torrance and others who helped focus attention on this important quality. The studies indicate that creativity is a relatively distinct trait - a separate ability which bears a rather low correlation with IQ scores. Research also reveals that it is possible to be highly creative without having an exceptionally high IQ.

There are various theories about the nature of creativity. Some think it is an outgrowth of good mental health or self-actualization (Maslow). The important new development regarding creativity is the scrapping of the old idea that creativity was a trait inherited by only a few, and that creative acts were the result of serendipity. Today, Parnes, Torrance, Taylor, Williams, and Renzulli believe that creativity can be taught through isolating its various attributes and by creating curricula to foster the development of these abilities.[4]

In a technological society where the only constant is rapid change, and where educators cannot possibly predict what kinds of problems students will face in the future, the idea that it is possible to develop creative problem-solving ability has struck a responsive chord. Moreover, it is now thought that all persons have some measure of creativity and that all children should have training to enhance this trait. As a consequence, much effort is now being expended to develop ways and means of providing for systematic development of creativity in school curriculums. The problem that remains, however, is that teachers need much more training in how to identify and properly nurture this quality in youth.

Creativity involves the ability to combine certain known elements (customarily thought of as separate and dissimilar) into combinations to produce something new which has some kind of social value. This may be a product, which can be seen or used such as a new invention or a work of art, or it may be internal experience or a concept, theory, or idea. The highly

[4]Gallagher, J.J. Research Summary on Gifted Child Education, Springfield, Ill. or State Department of Public Instruction, 1966.

creative make products which are totally new to society, (although, there have been instances of simultaneous, independent, creative discoveries in different parts of the world).

However, in education, the term "creative" connotes a product "new" to the child. Practice in creative activities is thought to engender a creative problem-solving approach to life. Not only does such an orientation provide for more successful living, but it also increases the possibility of the creation of new knowledge. Maslow believes that when persons are blocked from using their natural creativity their mental health suffers. He considers the exercise of creativity to be essential to self-actualization.

The components of creativity include such traits as sensitivity to problems, fluency of ideas and association, flexibility, originality, the ability to redesign or rearrange, analysis or the ability to abstract, elaboration, synthesis and closure, coherence and organization, and evaluational ability, all of which contribute to problem solving.

Lists of Characteristics of the Creative

Creative persons are sometimes thought of as being odd, queer, or as having undesirable personality factors. Perhaps these traits have grown out of the life-long struggle of the creative persons who develop new products or ideas which are rejected by others because these products or ideas are unfamiliar. It is felt that if creative children are identified early, if their gifts are nurtured and valued, and if they are helped to modify traits which alienate others, they can achieve beneficial social adjustment.

There are many lists of attributes of the creative which can be used for identification purposes. Among the traits most often listed are:

Problem sensitivity	Independence	Energetic
Flexibility	Elaborative abilities	Imaginative
Curiosity	Sensitivity	Non-conformity
Originality	Sense of humor	Perceptive
Open to new experiences	Playfulness	Intuitive
Fluency		Questioning

Tests for Creativity

At present it is not clearly understood whether creativity is one process or made up of many processes. Torrance, Guilford, and others have attempted to devise tests for creativity. Most of these are still in the developmental stage, but some are in the process of being validated. Generally, these tests explore the individual's ability to think of:

.Regular or alternative uses for objects (uses for a brick).

.Consequences in connection with a new or unusual situation.

.Categorization: things that belong in certain classes.

.Sentences wher given the beginning letter of words.

.Words with a similar meaning to the given word.

.Figures or pictures which may be developed from a given mark or line.

.Ways of elaborating upon details or pictures.

.New patterns by removing parts of a given pattern.[5]

Torrance's tests emphasize divergent production and transformation abilities. Guilford's tests tap a number of divergent production abilities. Starkweather's tests are useful for very young children. However, the predictive value of these tests needs to be verified. Teachers and others can also identify children who have creative potential through their products. But, just because a child is creative in one area is not a reason to assume that he/she is creative in others.

Evaluation of creativity should be made by people who can distinguish eccentricity from originality and understand the qualities of complexity and originality inherent in the creative act. Among children, these qualities must be discerned at various age levels. Therefore, the understanding of child development is as important as the understanding of the creative product judged.

THE INTERRELATIONSHIP OF IDENTIFICATION PROCEDURES WITH CURRICULUM AND STAFF

Gallagher stresses that school districts cannot wisely start a program for the gifted with student identification - it must always be with an assessment of the LEA strengths and weaknesses which can facilitate or limit program implementation. Renzulli advises, "Decide what kind of program you will have and then design the identification procedure to fit the program." It is also necessary to make a student needs assessment. If there are many possibly gifted students interested in science then the program should try to satisfy those needs. But, if the school cannot secure an accomplished science teacher, it is necessary to give up an unrealistic program goal. However, if a single student or a small group want to study computer science and no teacher or facilities for such study are available, it is better to attempt to locate outside resources to help them. The school must consider the good of the greatest number and cannot diffuse its efforts to the point of diminishing return but it must provide special programs for the gifted/talented.

Start with a fixed program goal as a priority and then list the strategies and resources which can be used to meet the goal. If these are satisfactory then identify the students who are gifted in the area of the program goals. If some of the interrelated factors are missing or faulty, redesign the program around new and more achievable goals. Provide in-service training before the program begins and on a continuing basis. Figure 1. illustrates the interrelationship between identification, curriculum, and in-service.

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[5]Crockenberg, S.B. "Creativity Tests," Review of Educational Research, 42 (1972): 27-45.

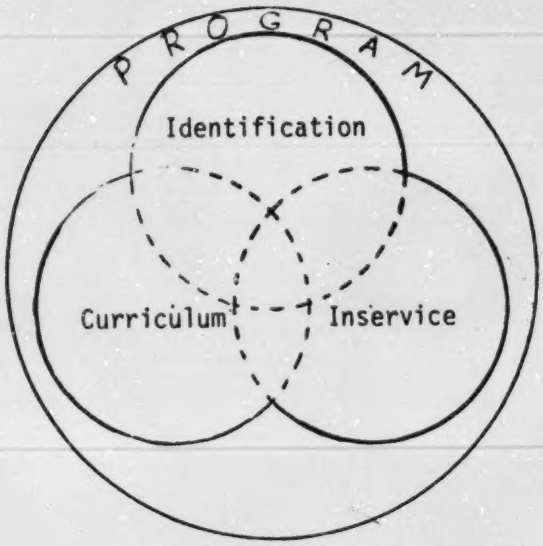


Figure 1

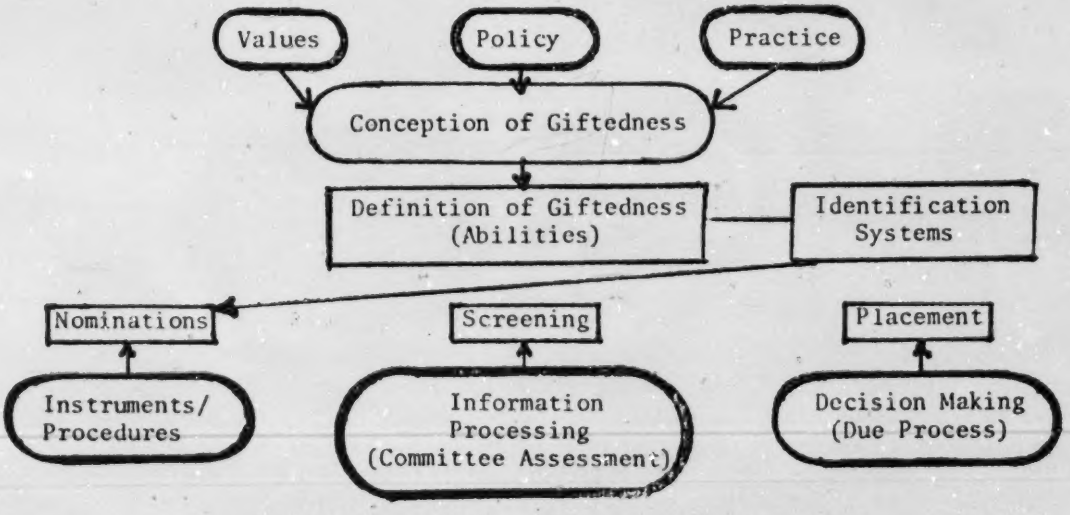
Identification procedures, curriculum development and inservice training are continuous interrelated procedures. The strengths and weaknesses of the school staff have bearing on what can be offered and thus upon who shall be identified. The curriculum must grow out of the needs and characteristics of the identified gifted target population. Inservice training must be geared to the type of curriculum provided for the gifted as well as their needs. Identification continues throughout program "treatment." Some children will not do well on tests but may reveal their potential if tried out in the program.

THE RELATIONSHIP BETWEEN CONCEPTIONS OF GIFTEDNESS AND IDENTIFICATION: SUGGESTED PROCEDURES

Renzulli has developed a model which shows the relationships between the conception of giftedness held by a school district and identification procedures. (Figure 2).

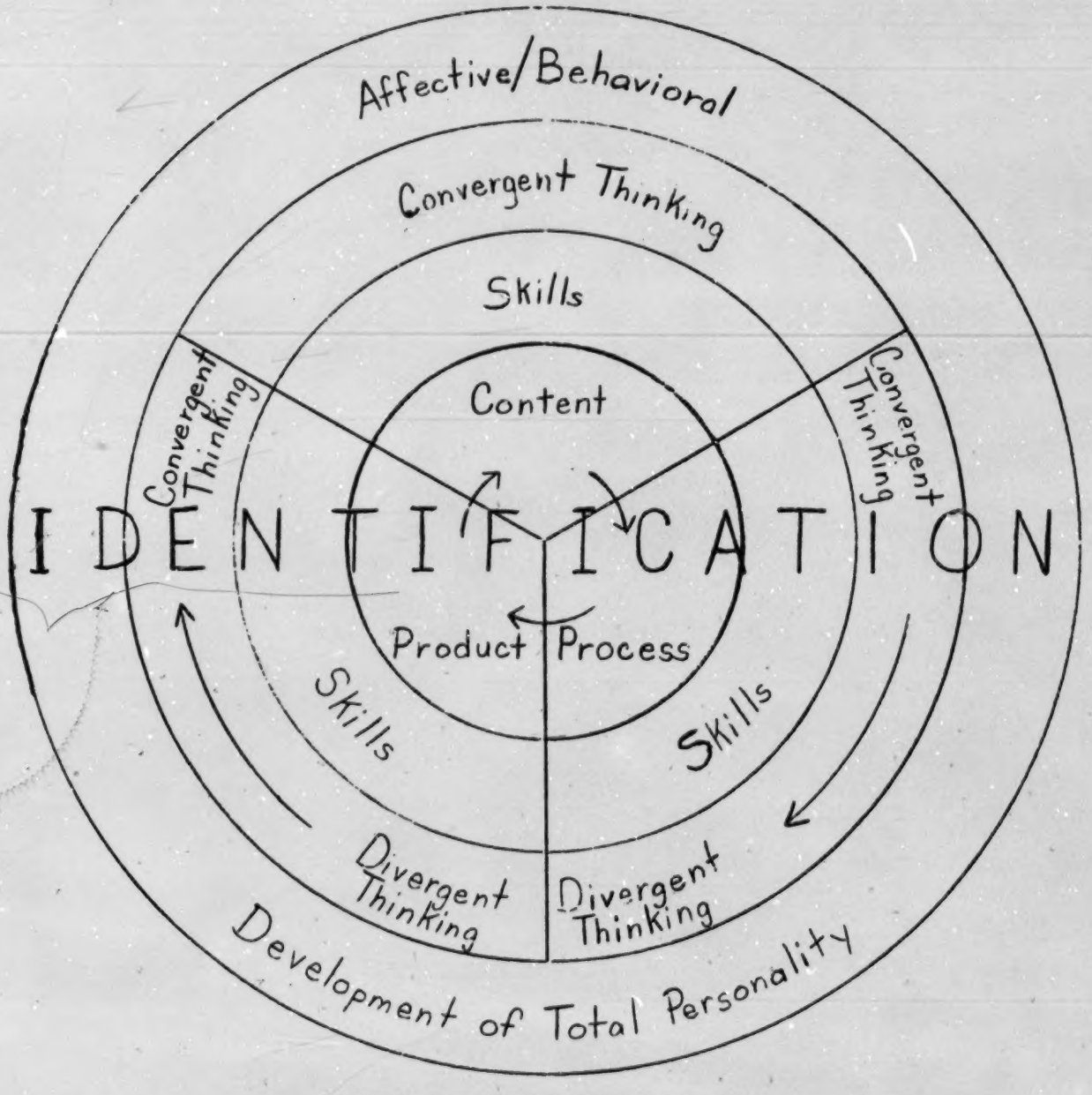
Figure 2

RELATIONSHIP BETWEEN CONCEPTION AND DEFINITION OF GIFTEDNESS AND THE IDENTIFICATION SYSTEM



The philosophy of the school district depends on its definition of giftedness. The program must be based on the philosophy. The Identification procedures must be related to the type of program offered. Screening and placement procedures must be related to the type of target population identified.

Figure 3



MODEL FOR GIFTED PROGRAMS*

The model in Figure 3, illustrates the way in which identification procedures should be continuous and interrelated to all phases of the program. Programs should be designed to permit talent to blossom. Some students may never reveal potential through present imprecise testing instruments but may be able to display it through the "treatment" of the program.

*Model from the North Carolina State Education Department.

In starting programs for the gifted:

1. Districts should form a committee on the Gifted consisting of educators, parents, administrators, psychologist and/or guidance personnel who, after sufficient study of the literature, accept or adapt the USOE definition of giftedness or create their own statement and philosophy about what constitutes giftedness and what course of action the school district should follow in providing school programs.

2. The identification system must then be based on the definition of giftedness.

3. Screening of students then follows to identify a pool of candidates for the program.

4. Nominations of students to be included in the program may then be made by teachers, administrators, counselors, peers, or parents.

5. A Placement Committee of educators and others should be formed to recommend placement.

6. Each district should develop a written plan and policy for their program which is in keeping with the regulations of the State Education Department. Due process procedures, as defined by State and federal law should be rigidly addressed, i.e. parental permission for evaluation other than regular routine testing, placement by the Placement Committee, and parental permission before any child is placed in the program. Procedures for parents and teachers to appeal the right of placement should be made which might parallel procedures in those states in which gifted education is mandated under PL 94-142.

DEFINING PROGRAM GOALS AND INSURING THAT THEY ARE REALISTIC

Our schools are best set up to foster academic talents and rarely do much to encourage talent in the arts. The arts do not appear to be a priority in American education. As noted above, we understand little about leadership since there are no abstract traits for it. We have a large gap in knowledge of how to foster any traits but the academic. Lack of federal support has caused a dearth of research in arts and aesthetic education. However, brain and other related research is revealing the importance of doing more than teaching verbal analysis and temporal sequencing and thus educating only half the brain. Persons with artistic ability usually have right brain dominance and process information differently. It has also revealed that those who have laterality (both sides of the brain are developed) evidence high levels of ability. If our aim is to foster all these types of gifts we must try to do more than promote verbal, analytical behaviors and temporal sequencing.

While researchers and capable teachers can and should innovate to explore these frontiers of knowledge, it is also important that program goals be realistic and geared to the quality of the available staff and facilities. Community resources should also be surveyed and properly used as an integral part of the planned curriculum whenever possible.

THE BENEFITS OF EARLY IDENTIFICATION

Ideally, the identification process should begin at the kindergarten level or before so that the child can benefit from adequate program planning. In this way the child's talents are not wasted nor will he/she be "turned off" by school because of frustrations arising from inadequate instruction and learning opportunities. Research data present overwhelming evidence of the benefits of early identification.

Early identification data are collected about the individual from parents, pediatricians, and others. A thorough assessment is made of the child's potentialities with particular focus on higher mental abilities. Intellectually gifted children are often very precocious and eager to learn. If they fail to receive a stimulating educational program they may become bored, hostile, apathetic, or "turned off" by school. Programs which lack challenge not only fail to stimulate the gifted but may result in regression, personality or behavior problems, and wasted talent.

POOL SELECTION: USE OF MULTIPLE CRITERIA

No single test, test score or other measurement should be the sole determining factor in the identification of the gifted/talented students. The key to a successful identification system is to design an integrated procedure which combines a variety of objective and judgmental measures for screening and selecting students for a special program. The following list is intended to suggest in a general way some possible sources of criteria for identifying gifted and talented students. Naturally, it is expected that the identification procedure would fit the intended program and not attempt to utilize every type measure noted below.

INTELLECTUAL AREAS: (Evaluation in these areas may include both demonstrated and potential ability.)

1. Standardized Tests
   - .Individual and group intelligence tests
   - .Aptitude tests
   - .Achievement Tests
   - .Specific aptitude tests, including creativity tests
   - .Personality measures
   - .Interest inventories

2. Judgmental Evidence
   - .School grades
   - .Teacher rating scales and checklist
   - .Observations and anecdotal reports
   - .Parent interviews and questionnaires
   - .Pupil product evaluation
   - .Peer nomination and self-assessment

CREATIVE ART AREAS: (Identification in these areas will depend almost entirely on subjective, judgmental evidence.)

1. Evidence of advanced skills as shown by products:
   - .Intense interest and involvement (Such evidence may be gathered by interview, rating scales, and other methods suggested above.)
   - .Interest inventories.
   - .Specific aptitude measures.
2. Judgment of outstanding teachers based on appraisal by specialized teachers:
   - .Artists, experts in the field and/or others qualified to evaluate pupils' demonstrated or potential talent.
   - .These judgments may be based on performance, auditions portfolio or product evaluation, or situational assessments.

RECOMMENDED IDENTIFICATION PROCEDURES

Identification procedures should take place in two stages: 1) initial screening of a pool of potentials and, 2) later refinement through curriculum, and still later through differentiation of curriculum. After deciding on programs goals, determine how many students will be included -- the top 3%? 5%? 10%? It is better to use rather inclusive initial screening procedures in order not to screen out possible potential population and therefore trade off efficiency for effectiveness. Of course, this approach will include many who will not profit from the program because it will be beyond their ability. These students can be weeded out in Stage 2 through curriculum design which provides experiences appropriate for the gifted.[6]

Identification through "Treatment' (The Program)

Potential talents can be effectively discovered by exposing children to a wide variety of enriching experiences with the aim of helping them to analyze their interests, (Renzulli's "Type 1 Enrichment"). Later, when the student finds an area of special interest he/she can then focus on an in-depth study in the chosen area, as Renzulli recommends in his "Type 3 Enrichment".[7]

The program treatment should help talent to emerge. To discover a budding poet, teach poetry writing. For a potential historian, teach historiography. Identification should be continuous through such procedures. It should not be thought of as continuous testing, but as on-going treatment which permits talent to emerge. Students who cannot or do not want to engage in these activities should be counseled out of the program thus refining the pool. Listed below and briefly described are some useful identification procedures.

SCREENING

The first step in identification is screening through the use of multiple methods. A battery of group devices might be used to determine individuals who score significantly above the mean. The precise score will depend on district policy. The test battery might include a group intelligence test, a test for skills in language arts, and a math test. For screening talent, persons with training in the arts should judge pupil products or performance as well as conduct individual interviews to discover depth of interests, personality traits and commitment.

Subsequent to the screening procedure, a list of possible nominees becomes available. From this pool of potentials, principals, teachers, and others may attempt to nominate candidates using the appropriate selection criteria provided by the school which, in turn, is based upon the educational philosophy of the district. Nomination forms can be designed to include definitions and criteria for selection. When the forms are completed they should be retained as evidence of the objectivity of the selection process as well as for future research.

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[6] Tannenbaum, A, Lecture at Columbia University Summer Institute, July 1978.

[7] Renzulli, J. The Enrichment Triad, Creative Learning, Press Wethersford, Conn, 1977.

GROUP TESTS

Group intelligence tests take less time, are more easily scored and less costly than individual tests. While useful for screening, group tests present special problems in that they discriminate against the highly gifted. Pegnato and Birch's study revealed that on the Otis test, with a cut-off point-of 125 or over, half of the gifted, including those with Binet scores of 146 to 161, failed to qualify.[8] Group tests are also less reliable for primary pupils than for other age groups. Group tests should never be used as the sole criterion for pupil selection. However, they are useful for preliminary screening.

INDIVIDUAL INTELLIGENCE TESTS

Terman adapted the work of Binet to construct the Stanford Binet I.Q. Test which is perhaps the most reliable instrument for measuring intelligence currently available. There are criticisms of this test, one of which is that it is heavily loaded with the verbal factor. Therefore, it is not highly useful for measuring the intelligence of those who are not in the cultural mainstream. Yet, it is important to keep in mind that verbal ability is crucial in the thinking process and problem solving, and extends into all areas of human learning. Human progress depends on verbal ability. The development of human societies could not take place without it.

If possible, have an individual intelligence test administered to each prospective pupil or give a group test to an individual student. Later, administer another group test for a more concise job of identification. The short form of the Binet is now being used in several programs.

RATING SCALES AND LISTS OF CHARACTERISTICS

Because of the expense involved in individual testing, many lists of the characteristics of the gifted/talented have been drawn up as another means of identification, and from these lists rating scales have been devised. Although these scales have not been field tested they are useful devices nonetheless. Their major purpose is to provide adult raters with descriptions of intellectual, creative, psychomotor and psychosocial characteristics which can be used in evaluating student behavior and performance.

The chief drawback of rating scales is the subjective quality of the ratings. Teachers or parents using them may misinterpret a child's behavior or may hesitate to give either a very high or low rating. A creative child may be rated low because of his non-conforming behavior which may be interpreted in negative ways. However, with training, the personnel utilizing these scales can become more accurate in spotting important characteristics and thus aid in the validation of the scales as important diagnostic instruments.

Despite their limitations, rating scales are valuable supplements to the standardized tests for the identification of potential as well as functional talent and/or giftedness. Rating scales are also useful in assisting teachers to better diagnose pupil behavior. Research (Pegnato

[8]Pegnato, C.W. and Birch, J.W. "Locating Gifted Children in Junior High Schools: A Comparison of Methods" Exceptional Children, 25(1909) 300-304.

and Birch) shows that in the past, teachers have not been reliable in identifying giftedness. But, when they are taught what to look for their accuracy improves greatly. For this reason, all teachers should become familiar with the characteristics of the gifted/talented and the means for the identification of such gifts. Accurate identification is essential for program sucess..

NOMINATION BY PARENTS, PEERS AND TEACHERS

Teachers and parents are very useful in identifying special talents because they see the child regularly and can spot special abilities more readily than others, especially if some training is given in the use of rating scales and other devices in the identification of the gifted/talented. Peer nomination has also been found to be very useful in identifying gifted children since children are quick to recognize traits of unusual intelligence, talent, or leadership ability in their classmates. Sociometric devices can be used to locate leadership talent. Questions such as those listed below when asked of students can be used to locate various types of special ability within a class.

1. Who would make the best class president?
2. Who will get the highest reading score?
3. If you were in trouble at school who would you ask to go with you to the principal's office to explain the situation?
4. Who would you choose to help you with your science project?

Pupil self-nomination may also be considered as an added dimension of self-confidence and interest. Sample questionnaires can aid parents, students, and teachers in such assessments.

PUPIL PRODUCTS REVEAL CUES USEFUL FOR IDENTIFICATION

The use of pupil products in identification procedures is recommended, especially if they consist of unusually advanced work from very young children. Pupil products or performance are central to talent identification. Often, these unusual products reflect a child's special interests both in and outside of school. Consequently, it is essential to ask parents about the childs extra-curricular activities and talents which might not be revealed at school not only for purposes of identification, but to provide opportunities for development of talent and interest areas.

Many gifted students are concerned about social problems and tend to hold high ideals. Opportunities to express values and ideals through writing, i.e. essays, poetry, plays, etc., may also give cues for screening and nomination. Autobiographies, especially at the elementary level, often indicate unusual abilities.

THE CASE HISTORY

Another method of identifying the gifted is the case history. The psychologist secures part of the examination data through a case history which is particularly important for very young children who have relatively few achievements to be judged. The history includes background information, historical, developmental, and medical data, unusual behaviors, serious

problems and health history. Part of the case study includes the screening and nomination form which indicates test data, cumulative record data and anecdotal notes from teachers. Additional data are secured from various tests and questionnaires to determine the pupil's intellectual functioning, interest areas, performance in terms of actual classroom output, physical and social development and potential problem areas.

The case study also includes a parent inventory. This data supplied by the parent gives the school information about the family occupations and background, evidences of superior performance at home, family activities and experiences provided for the child, the child's typical extra-curricular activities, and his/her special needs. Certain areas such as attitudes and motivation are very significant when advanced placement is considered as a program possibility.

The psychologist then organizes and summarizes the information, interprets the data, and makes recommendations. On the basis of his best judgment, the psychologist should discourage as well as encourage the placement of gifted children in programs. The complete test protocol should be available for future consideration and evaluation.

Ethics of Identification

Professionals should restrict their contributions of data to case studies within the limits of their backgrounds and competencies. While teachers may collect and provide data, caution should be exercised in such areas as personality assessment. The psychologist, or otherwise qualified pupil personnel worker, should collect and analyze the data and exercise professional ethics in use of the data.

Periodic Follow-up

Periodically, the entire case study of a child identified as gifted should be reviewed and reassessed in the light of new evidence such as test data, academic records, and performance, as well as teacher observations, discipline records, changing opinions and attitudes of parents, and periodic self-evaluation by the student. All of these factors are considered in reassessment of the pupil suitability for programs or for his need of counseling or instructional experience.

USE OF SUMMARY MATRICES

Summary matrices are designed to pull objective and subjective assessment data on formats which can be analyzed and interpreted. They can also be used to determine student strengths and weaknesses. Cut-off points can be readily established for such data.

The matrix makes use of data from the regular program as well as from teacher and parent rating scales, student self-assessment and other data. Use of matrices insures that decisions are based on analysis and interpretation of both subjective and objective data.

Dr. Frank Williams has designed a matrix (Figure 4) useful for identification purposes. Along the horizontal axis the matrix is divided into three broad categories: test data, performance data and developmental data. Along the vertical axis are listed five talent categories, the definitions of which follow:

.academic/intellectual - high academic aptitude and/or achievement in one or more fields of study

.artistic/expressive - visual and/or performing arts

.leadership/psychosocial - high level of leadership, social and communications skills, and superior moral judgment

.divergent production/processes - advanced insight, outstanding imagination, innovative or creative reasoning ability, problem solving ability and original and productive thinking

.kinesthetic - manipulative skills (sculpture, mechanics), expressive and artistic body movement

The strengths of the mainstream gifted student are marked on the matrix with an X, the strengths of the culturally different student with an O. Seven different types of tests have been categorized in the matrix. Possible test suggestions have been listed in the attached bibliography.

Children who can handle language (or mainstream culture) may be evaluated with the Binet which is a good indicator of potential for academic achievement. Children who cannot handle semantics, or handle them poorly, cannot be evaluated fairly on verbal measures and most IQ tests are verbal. For the culturally different, or handicapped, educators must look to behavior correlates, attention span, perseverence, curiosity, energy and other components of behavioral checklists and scales.

An acknowledged limitation of the use of individual IQ tests is the cost which would bankrupt most school systems. (Short forms of the Binet save time in administration). However, group intelligence tests tend to miss large numbers of the gifted and misidentify others. Creativity tests should not be used to determine intellectual capacity.

This broad category contains three separate measures of performance: grades; demonstration of skill; and nominations, checklists, scales.

Peer nominations are highly reliable. Teacher nominations are reliable only when checklists are used to focus teacher attention on particularly significant behaviors of the gifted. Parent nominations are particularly relevant at the early childhood level.

Information in the third category of the matrix can be revealed through case studies, biographical data, anecdotes and interviews. Little known abilities manifested at an early age, precocity and extra-curricular activities can be flushed out through these processes. High motivation in non-school activities may be revealed by such questions as, "What is your hobby?" "How long have you been interested in this?" The significance

Figure 4

X - THE MAINSTREAMED GIFTED STUDENT

O - CULTURALLY DIFFERENT GIFTED STUDENT

	TEST DATA							PERFORMANCE DATA						DEVELOPMENTAL DATA
										Nominations Checklists, Scales				
	Intelligence	Achievement	Creativity-Divergent Thinking	Aptitude	Divergent Feeling	Biographical Inventory	Culture Free	Grades	Demonstration of Skills	Teacher and/or Other School Personnel	Peer	Parent	Self	Case studies, anecdotes, biographical data and interviews
Academic/ intellectual	X	X		X		X		X	X	X	X	X	X	X
			O	O			O		O		O	O	O	O
Artistic/ expressive			X		X	X			X	X	X	X	X	X
			O	O		O			O	O	O	O	O	O
Leadership/ psychosocial				X		X			X	X	X		X	X
						O			O	O	O		O	O
Divergent production/ process			X		X				X	X	X	X	X	X
			O	O					Q	O	O	O	O	O
Kinesthetic				X					X	X	X	X	X	X
									O	O	O	O	O	O

of motivation/perservence is a factor borne out in the lives of many late bloomers such as Pasteur and Edison.

THE BALDWIN MATRIX (BIM)

Alexinia Baldwin, professor at SUNY at Albany, has worked successfully with the culturally disadvantaged and has developed a useful matrix for identification of the culturally different (Figure 5) which uses eleven different testing scores. The Baldwin Identification Matrix (BIM) represents an equitable way to identify students for gifted programs. Baldwin does not recommend that standardized instruments be ignored in the use of this format but suggests that additional instruments would extend the data base and establish the acceptance of a broad range of abilities..

If the school district accepts the broader definition of giftedness, it faces the dilemma of pulling all the scores together in workable, practical non-discriminatory format to determine the child's eligibility. Baldwin lists many advantages for the use of the matrix which is shown in Figure 5.

Figure 5

Susan Matrix , student

Baldwin Identification Matrix*

Indicate points after each test according to score earned. Add total number of points earned by student.a

Tests	Scores ⑤	④	③	②	①
	140+	130-139	120-129	110-119	100-109
1. Standardized Intelligence Tests	(✓)	( )	( )	( )	( )
	95%ile	90-94%ile	85-89%ile	80-84%ile	75-79%ile
2. Achievement Test Composite Score	( )	(✓)	( )	( )	( )
	Stan 9	Stan 8	Stan 7	Stan 6	Stan 5
3. Achievement Test - Reading Score	(✓)	( )	( )	( )	( )
	95%ile	90-94%ile	85-89%ile	80-84%ile	75-79%ile
4. Achievement Test - Math Score	( )	(✓)	( )	( )	( )
	32	28-31	24-27	20-23	16-19
5. Learning Scale Score	(✓)	( )	( )	( )	( )
	36	32-35	28-31	24-27	18-23
6. Motivational Scale Score	(✓)	( )	( )	( )	( )
	40	36-39	32-35	28-31	20-27
7. Creativity Scale Score	( )	( )	(✓)	( )	( )
	40	36-39	32-35	28-31	20-27
8. Leadership Scale Score	( )	( )	(✓)	( )	( )
	Superior	Very Good	Good	Average	Below Average
9. Various Teacher Recommendations	(✓)	( )	( )	( )	( )
**10. Psychomotor Ability	( )	( )	(✓)	( )	( )
**11. Peer Nomination	( )	(✓)	( )	( )	( )

Total Number of Points 46

*Recommended by Alexinia Baldwin, University of New York at Albany, and developed for use by Lorraine Hertz, Minnesota Office of Gifted and Talented

**Suggested additional inclusions on the matrix

[9]The Baldwin Matrix, a Baldwin and others D.O.K. Publishing Co. Buffalo, N.Y. 1978

Advantages of using the BIM Matrix

1. A school district can use available information for assessment of a child's capabilities.

2. The total score gives the child from a different culture an opportunity to compete for recognition in a specialized program. This advantage also applies to the child whose talents or giftedness lie in areas which have traditionally been excluded from recognition.

3. The district can tailor the program to the abilities shown on the profile sheet. (A "threshold" program can help children improve areas of weaknesses before entering a high-competition area.)

4. Strengths can be assessed as well as weaknesses of children who are exceptionally gifted in the traditional areas.

5. A starting point is provided for curriculum development and an organizational structure for meeting the needs of the identified children.

6. The underachiever is identified through profile scores.

GOWAN'S LOW COST IDENTIFICATION PROCEDURE

There also exist some nontest ways of identifying the gifted child. Most of these rely on nomination techniques by teachers and peers. An excellent example of this method of finding such children is given by Torrance (1962) in his article "Non-Test Ways of Identifying the Creatively Gifted." Other hints will be found in the chapter on "Identification" in The Education and Guidance of the Ablest (Gowan & Demos, 1964).[10] John Curtis Gowan takes the following view on identification procedures:

> "One important concept for the principal to grasp immediately is that decisions about who is in and who is not in a gifted program should be made by a committee, not a test score. There are a lot of good theoretical as well as practical reasons for this view: one of the most important is the destruction of the naive idea that there is a sharp razor-edge dividing one group from another.
>
> A committee procedure, however, requires a plan of action, and many principals are too busy to take the time necessary to evolve such a plan. (It requires too much lead time to let a committee go through the trial-and-error required for the autonomous development of such a procedure.) For these circumstances the following is suggested as a model identification program to be modified in specific particulars to local requirements:

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[10]From John Curtis Gowan, "Identifying Gifted Students for a Program", Accent on Talent Vol. 2 (2967) p. 1 Reprinted by permission of the author and Accent on Talent.

1. Select beforehand an approximate percentage of the students for the program, depending upon local wishes and value judgments. It is suggested that this percentage should not be less than 1% and not more than 10%, except in exceedingly atypical schools. Let the percentage target be represented by P%.

2. Use a group test screen, and cut at a point which will give 5P%. Take the top tenth of this group and put them into the program without more ado. Put the rest of the group into the "reservoir."

3. Circulate to each classroom teacher a paper in which he/or she is asked to nominate the:

   a. Best student
   b. Child with the biggest vocabulary
   c. Most creative and original
   d. Child with the most leadership
   e. Most scientifically oriented child
   f. Child who does the best critical thinking
   g. Able child who is the biggest nuisance
   h. Best motivated child
   i. Child the other children like best
   j. Child who is most ahead on grade placement
   k. Brightest minority group child in the class in case there are more than five, and one has not been named heretofore.
   l. Child whose parents are most concerned about increasing the enrichment of his educational progress.

4. Use an achievement battery and cut at a point which will yield 3P%. Make a list of all students who are in the top tenth in numerical skills; add both of these lists to the "reservoir".

5. Together with the principal, curriculum staff and guidance staff, plus a few teachers, go over and make a list of children who:

   a. Have held leadership positions.
   b. Achieved outstandingly in any special skill (such as arithmetic).
   c. Represent a minority group.
   d. Are examples of reading difficulties but believed bright.
   e. Are believed bright but may be emotionally disturbed.
   f. About whom any single individual feels he might be in the program. Put these in the "reservoir."

All pupils in the "reservoir" should now be ranked as the number of times they have been mentioned. All children having three or more mentions should be automatically included in the program. All children having two citations should be sent to Binet testing.

The Binet equivalent for the P% cut should be determined and any child above this cut placed in the program. If it is feasible, children with one mention should be Bineted with the same results. The remainder of the children are in the "hands of the committee." Each case should come up individually, and some of them should be placed in the program despite a

Binet below the cut score. Special consideration should be given to (1) minority children, (2) emotionally disturbed children, (3) children with reading difficulties and, (4) children with marked leadership or creative talents.

The committee should not be afraid to include children in the program because of social considerations, but each child who comes up before the committee consideration should have an individual test.

It is believed that such an identification program:

1. Is reasonably effective in finding most able children.

2. Is reasonably efficient in cutting costs of individual testing to the bone and in conserving valuable committee time, which need not be spent on consideration of children who obviously go into such a program.

3. Provides the multiple criteria which are so important in locating the able.

4. Is flexible enough to provide for special cases.

If the program doesn't do anything for any one of these children, they can always be taken out with a minimum of educational damage.

THE PLACEMENT COMMITTEE

A committee of teachers, a psychologist and administrators should study the data in view of placing students in appropriate programs. Case conferences with parents should acquaint them with the data and garner their viewpoints as important factors in placement. Placement decisions must be subjected to constant revisions in the light of new data. If a pupil does not wish to participate in any given program his wishes should be respected. It is important to continually refine the skills of personnel in order to help them seek out the gifted not only through tests but through actual performance.

CONTINUOUS EVALUATION

To insure program accountability each pupil must be evaluated yearly in respect to:

1. His/her academic (or other desired type of growth), interest in the special program and general development in areas other than achievement and

2. Increments of academic gains as compared to control groups or other similar control groups not receiving the special program. This will enable an assessment of the program to be made as well as to promote public acceptance of it.

THE IDENTIFICATION OF THE DISADVANTAGED GIFTED

Passow points out that the disadvantaged gifted pose special problems which must be overcome to allow for social, economic, language or other difficulties related to this group. Consequently, it is suggested that the initial screening pool be based on the top 8 to 10% of the population available on any particular test instrument. Difference in learning style should be taken into account and program teachers must have training in dealing with the culturally different. However, the program goals should be the same as for any other population. Teachers of programs for the disadvantaged must be aware of the value system of the community as well as the effect of the environment and school climate on the child's aspirations. In this way, teachers can try to overcome deterrent pressures on the student.[11]

Despite claims to the contrary, no test is free of cultural influences. Even nonverbal measures are affected by cultural reactions to them. Tannenbaum claims that even if the IQ test is culturally biased, it is still the best measure of mental power. However, since the socio-political climate indicates resistance to Binet, job tasks related to the Binet placing the child in a problem solving situation appropriate to his/her environment may be created and used instead. However, such test construction should be validated by qualified professionals.

Questionnaires and rating scales are now available for the culturally different. Baldwin's Matrix, previously described, is useful in identifying the culturally different child. It permits the joining of a wide variety of objective and subjective data for this purpose.

Often, disadvantaged gifted children may have deficits in basic skills. Remedial work must be included in programs for them. Identification procedures then continue through exposure to a broad variety of program experiences permitting their talents to emerge.

Since it is necessary to provide as much information as possible about the culturally different (including test scores) other methods of obtaining such data are briefly described below. At this time, however, no statement can be made as to the validity of these instruments.

Biographical Indices

The Alpha Biographical (Institute for Behavioral Research) is another tool for identifying creative talent among disadvantaged minorities. This instrument, consisting of 300 items, is based on the belief that past behavior descriptions can be used as indicators of future performance. Researchers hold that the Alpha Biographical can be used as an aid to identifying different talents, important not only for academic performance but for performance in a variety of work situations as well. This instrument does not discriminate against racial minorities.

The Sub Cultural Indices of Academic Potential (SCIAP, Grant and Renzulli, 1971) is another instrument designed to take account of test bias and the cultural distinctiveness of minority group members. It thus enables

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[11]Passow, Harry, Lecture Col. U.T.C. Summer Institute, 1978) New York

schools to identify potential in minority students. This instrument consists of 140 items which ask students how they feel about themselves and how they would react to situations common to their everyday experiences. There are no right and wrong answers to the SCIAP items, but rather it yields a profile that points out student preferences and learning styles in areas such as organization and management of information, commitment to social responsibility and leadership, flexibility in social situations, originality in cultural context, initiative and persistence, self-concept, attitudes toward education and support of family and school toward continuing education.

Language and Development Considerations

Passow states that one major characteristic of the disadvantaged is their inability to master the linguistic structures of the dominant culture. For this reason it is necessary to develop identification strategies which are not language dependent. Since the child can usually speak better than he can write, it is essential that he not be required to write down all answers. Tape or human recorders can be used instead.[12]

Identification procedures among the disadvantaged should be carried out with greater frequency until more and better predictive instruments are available. Assessments should be followed up by classroom activities specifically designed to enhance the talent potential identified. Curriculums for the disadvantaged should grow out of their special interests and life-related problems.

Torrance lists several characteristics which he calls the "creative positives" of the disadvantaged. Among these are figural ability, fluency, creativity and others. He suggests that programs be built around these strengths, and that they should be taken into consideration in identification.[13] On Guilford's Structure of Intellect Model, the strengths of the disadvantaged youth appear to lie in figural strength (visual, auditory, kinesthetic, and behavioral power), social intelligence, planning ability and divergent problem solving ability. They also excel in systems transformation or the ability to produce complicated patterns and to change and adapt ideas. There is no surefire way to test for these qualities. Nevertheless, specific tests for the disadvantaged should involve finding ways in which the child exhibits outstanding abilities valued by his culture. The child should also measure at least bright-average on regular tests and measures. In addition, special consideration should be given to those who demonstrate creative ability and leadership potential. While all of the disadvantaged need help, gifted disadvantaged children have more talent with which to reward society if the society nurtures them and more to oppose it if neglected.

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[12]Passow, Harry, Lecture Col. U.T.C. Summer Institute, 1978, New York

[13]Torrance E.P. "Are the Torrance Test of Creative Thinking Biased Against or in Favor of Disadvantaged Groups?" Gifted Child Quarterly, 15 (1971) 114-141.

IDENTIFICATION OF TALENT IN DANCE, MUSIC, THEATRE, AND THE VISUAL ARTS

Various checklists and rating scales have been devised for talent programs which contain questions about the amount of talent a student has. Some of these are to be filled out by the rater, others by the student applying for a talent program. Scales are constructed on the intellectual, talent, and creative characteristics of superior students. They are derived from research on traits of gifted children. The scale items are grouped in the four dimensions of motivation, learning, creativity, and leadership. Such scales improve teacher judgment both by alerting them to the specific characteristics sought as well as improving objectivity by quantifying the ratings in the four areas. Other scales cover topics of artistic, musical, dramatic, communication and planning characteristics. (See the Norwalk Creativity Scale, Appendix).

One potential source of error in the use of rating scales is what is called the "intrusion of the personal equation." This involves allowing personal factors such as attitudes, opinions, and prejudices to influence one's judgment. Gifted children who are highly nonconforming, challenging, openly bored or hostile rarely place themselves in the teacher's good graces. In contrast, there is a tendency on the part of teacher to overestimate the intelligence of the conforming, well-behaved, producing child. Pegnato and Birch have verified the low effectiveness of teacher judgment in identifying the gifted. Training in the use of scales and characteristics of the gifted can sharpen teachers' identification skills.

THE HANDICAPPED GIFTED

Diagnostic and assessment procedures used with the handicapped often focus so exclusively on deficits that they fail to search for cognitive strengths and intellectual or other gifts and talents. A handicap in one area does not imply a lack of ability in all areas of functioning. Cognitive abilities in the physically handicapped can be measured with standard test instruments although frequently the tasks must be adjusted to compensate for the disability. For a cerebral palsied child, eye blinks may substitute as a response to signify yes or no without lessening the difficulty of the task. Other modifications of existing tests can disclose underlying mental capacity. Discovering and nurturing a special talent in a handicapped child can be an enormous assistance in helping the individual to lead a more productive and satisfying life.

Space limitations prevent further discussion of this complex topic. Readers are referred to the book, Educating the Handicapped Gifted by C. June Maker, (Council for Exceptional Children, 1977) and the paper, "Search for Cognitive Giftedness in Exceptional Children" by Hokinson and Jospe. This paper and additional information can be obtained from Project SEARCH, directed by Alan White in New Haven, Connecticut.

GROUND RULES FOR IDENTIFICATION

1. The many patterns of abilities that make up giftedness are varied and complex, seldom or never appearing in toto in any given child. Recognition of these gifts must be attempted through the use of many different media and by a variety of procedures.

2. Identification is a "sorting out" process which can have profound and important consequences for students. To allay the anxiety of those engaged in identification, it is helpful to have a list of already defined characteristics which can be used to make subjective appraisals.

3. Diagnosis of a child's performance must be a continuous process carried on over a period of years. This procedure does not necessarily mean continuous testing but continuous observation and appraisals of the child's progress. Provisions must be made also for constant opportunities to enter programs for the gifted. Those who no longer meet the qualifications of a program should be counseled out of it.

4. Appraisals of talent and giftedness must be based on many kinds of significant evidence gathered from a variety of acceptable sources. They must take into account nonintellective factors such as motivation and other personality traits which affect intellectual performance.

WHAT IDENTIFICATION DOES AND DOES NOT ACCOMPLISH

1. Be aware that: Identification (properly done) defines a population of children who possess highly advanced complex,ability. It serves to alert teachers to the true potential of individuals and helps them plan more effectively for the gifted than would be the case without identification. It can also help older children who have not been aware of their abilities as well as their parents who, in turn, can better encourage the child's development.

Identification per se does not improve learning. Children who are identified and then placed in regular programs show no change. Identification does not alter home or community conditions which could deter healthful development. But, if a well planned program reduces these or other deficits, performance of a gifted child will show considerable improvement.

2. Recognize that: While occasional provisions for the gifted are beneficial, the aim of the district should be to provide a <u>developmental program</u> for the gifted/talented. Piecemeal or crash programs limited to certain levels or topics, or to particular or ethnic or socioeconomic groups should be avoided. The goal should be excellent education for <u>every</u> gifted and talented person.

3. Recognize that it is necessary to develop better means of identifying potential giftedness. Meanwhile, use the existing recommended procedures and instruments as efficiently as possible.

4. Remember that the reason for identification of the gifted/talented is the provision of good special programs which will nurture their abilities and talents.

A WORD OF CAUTION IN USING TEST INSTRUMENTS

<u>In using any test instrument, careful study should precede use.</u> Consult Buros or other cited sources for information. To reenforce the importance of such study, listed below are comments (from Buros) by experts on tests administered to the gifted.

...Test validity is dubious.._____for those whose environments do not include middle class language patterns.

...As in the case with all short tests, the amount of information derived from the test is limited.

...None of the correlations based on disadvantaged or minority groups appears to be significantly greater than zero, although here again the persistent failure of the manual to provide information on statistical significance requires the consumer to be his own statistician.

...However, a healthy skepticism is justified if not demanded in the use of this test which was hastily marketed with inadequate norms and meager reliability and validity data.

...This test...is less culture free than the Binet tests. It is of little or no value because of inadequate sampling of abilities.

The three books listed below will provide invaluable information for judging the worth and reliability of test instruments in identification procedures. Buros lists all tests in print, publishers, authors, and cites references which discuss them. Hoepfer gives information about various tests in great detail, while Lyman's book explains tests in layman's terms.

Buros, O.K. Tests in Print. Highland Park, New Jersey: The Gryphone Press, 1974.

Hoepfner, Ralph and others. CSE-RBS Test Evaluations: Tests of Higher Order Cognitive, Affective and Interpersonal Skills. Los Angeles, California: Dissemination Office, Center for the Study of Education, University of California, 405 Hilgard Avenue, 1972.

Lyman, Howard B. Test Scores and What They Mean. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1971.

TEST-RELATED PROBLEMS

Problems arise in finding reliable measures for early childhood test levels. Attempts to use nonverbal tests do not predict ability in the verbal skills necessary for success in school. Problems have also arisen from the use of the short forms of individual tests for minority children as well as the varying results obtained among different sex groups, race groups, ethnic and socioeconomic groups. Tests used in combination have been found effective in predicting skills but this approach is time-consuming.

Many of the tests instruments advocated for screening the gifted have been validated with average or handicapped children. It is therefore important to examine closely their potential usefulness for the gifted on such elements as content and upper range. Evidence also should be sought regarding their usefulness with the economically disadvantaged and with groups with differing cultural backgrounds. Since some short tests are

totally verbal they would be less useful than individual instruments of greater scope.

Creativity tests attempt to identify abilities untapped by existing intelligence tests. Recent evaluations of such tests stress the need for validity studies. The tests seem to measure particular elements of creativity rather than the global ability of creative thinking. However, efforts to measure creativity have influenced school practice because writings on teacher behavior conducive to creativity has tended to result in beneficial changes in school practice. However, the best judge of creative talents still remain the experts in the various areas.

Individual Tests of Intelligence

Individual tests of intelligence have a number of advantages over group tests a broader sampling of abilities is possible, a greater range of abilities can be tested and interpretation of the quality of the performance is possible.

Obvious problems related to individual testing are the time and cost factors and the lack of trained personnel in many areas, unwillingness to assign psychologists to test the gifted, and some content which penalizes children with language and environmental handicaps. Individual intelligence tests do not measure creative potential and a number of traits important to success such as values, work habits and perseverance.

Nonetheless, a basic floor of intelligence is needed for accomplishment in any field, athletics and leadership and coping skills as well as in academic areas. It is even more crucial in problem solving, learning, and vocational success.

PUBLIC RELATIONS AND PROGRAMS FOR THE GIFTED

To insure good public relations and support of programs it is essential that parents and the community be educated to program goals and that they understand enough about the district identification procedures to know that they are based on a combination of objective and subjective judgment of qualified professionals who have considered the input of parents and others. It is also important to keep identification data on a matrix or other form so that in case of appeal to placement the objectivity and fairness of the identification procedure can be substantiated.

APPENDIX

The attached appendix provides a sampling of rating scales, nomination forms, lists of characteristics of the gifted, talented and other useful devices for identification as well as a bibiliography of literature on identification of the gifted/talented.

Appendix

PRINCIPLES OF IDENTIFICATION

Identification procedures should be based on the definition of gifted and talented.

Identification procedures should:

- Evolve from the community philosophy, the goals and objectives of the written plan,
- Reflect the educational goals of the pupils to be served,
- Involve all competent personnel and resources,
- Be part of a total school program to meet the needs of all students.

Identification instruments should be recognized for their strengths and limitations.

Identification of different types of gifts should be conducted separately.

Criteria used for identification of students should be clearly outlined, available to all and explained.

Identification:

- must clearly reflect the intent of the program,
- should utilize appropriate instruments appropriately,
- should be based on multiple and specific criteria,
- should avoid becoming so enamoured of standardized instruments that common sense is ignored,
- should be administered by a committee,
- should be subject to the evaluation process,
- should be ongoing so that students have many opportunities to enter program.

CHARACTERISTICS OF THE GIFTED AND TALENTED *

There are numerous lists of characteristics or distinguishing features and attributes of gifted and talented children. Teachers and parents should interpret any single list, including this one, as exemplary rather than exclusive. Few gifted children will display all of the characteristics. Understanding the characteristics of gifted and talented children will help parents and teachers sharpen their observations of these children in two distinct ways: (a) While characteristics do not necessarily define who is a gifted child, they do constitute observable behaviors that can be thought of as clues to more specific behaviors, and (b) these characteristics are signals to indicate that a particular child might warrant closer observation and could require specialized educational attention, pending a more comprehensive assessment.

General characteristics of gifted/talented children

- They typically learn to read earlier with a better comprehension of the nuances of the language. As many as half of the gifted and talented population have learned to read before entering school. They often read widely, quickly, and intensely and have large vocabularies.
- They commonly learn basic skills better, more quickly, and with less practice.
- They are better able to construct and handle abstractions than their age mates.
- They are frequently able to pick up and interpret nonverbal cues and can draw inferences which other children have to have spelled out for them.
- They take less for granted, seeking the "hows" and "whys."
- They display a better ability to work independently at an earlier age and for longer periods of time than other children.
- They can sustain longer periods of concentration and attention.
- Their interests are often both wildly eclectic and intensely focused.
- They frequently have seemingly boundless energy, which sometimes leads to a misdiagnosis of "hyperactive."
- They are usually able to respond and relate well to parents, teachers, and other adults. They may prefer the company of older children and adults to that of their peers.

---

*Prepared by Bruce Boston for the Council on Exceptional Children, Reston, VA.

Creative Characteristics

- They are fluent thinkers, able to produce a large quantity of possibilities, consequences, or related ideas.
- They are flexible thinkers, able to use many different alternatives and approaches to problem solving.
- They are original thinkers, seeking new, unusual, or unconventional associations and combinations among items of information. They also have an ability to see relationships among seemingly unrelated objects, ideas, or facts.
- They are elaborative thinkers, producing new steps, ideas, responses, or other embellishments to a basic idea, situation, or problem.
- They show a willingness to entertain complexity and seem to thrive in problem situations.
- They are good guessers and can construct hypotheses or "what if" questions readily.
- They often are aware of their own impulsiveness and the irrationality within themselves and show emotional sensitivity.
- They have a high level of curiosity about objects, ideas, situations, or events.
- They often display intellectual playfulness, fantasize, and imagine readily.
- They can be less intellectually inhibited than their peers in expressing opinions and ideas and often exhibit spirited disagreement.
- They have a sensitivity to beauty and are attracted to aesthetic dimensions.

Learning characteristics.

- Gifted and talented children often show keen powers of observation, exhibit a sense of the significant, and have an eye for important details.
- They often read a great deal on their own, preferring books and magazines written for youngsters older than themselves.
- They take great pleasure in intellectual activity.
- They have well developed powers of abstraction, conceptualization, and synthesizing abilities.

- They have rapid insight into cause-effect relationships.
- They tend to like structure, organization, and consistency in their environments. They may resent the violation of structure and rules.
- They display a questioning attitude and seek information for the sake of having it as much as for its instrumental value.
- They are often skeptical, critical, and evaluative. They are quick to spot inconsistencies.
- They often have a large storehouse of information regarding a variety of topics which they can recall quickly.
- They show a ready grasp of underlying principles and can often make valid generalizations about events, people, or objects.
- They readily perceive similarities, differences, and anomalies.
- They often attack complicated material by separating it into its components and analyzing it systematically.
- They have a well developed common sense.

Behavioral characteristics.

- They are willing to examine the unusual and are highly inquisitive.
- Their behavior is often well organized, goal directed, and efficient with respect to tasks and problems.
- They exhibit an intrinsic motivation to learn, find out, or explore and are often very persistent. "I'd rather do it myself" is a common attitude.
- They enjoy learning new things and new ways of doing things.
- They have a longer attention and concentration span than their peers.
- They are more independent and less subject to peer pressure than their age mates. They are able to be conforming or nonconforming as the situation demands.
- They have a highly developed moral and ethical sense.
- They are able to integrate opposing impulses, such as constructive and destructive behavior.
- They often exhibit daydreaming behavior.
- They may seek to conceal their abilities so as not to "stick out."
- They often have a well developed sense of self and a realistic idea about their capabilities and potential.

Characteristics of the Creative *

(Compiled by Leonard Lucito from works of Torrance, Gallagher and Stien)

1. View the world with extra wonder and see magic in it;
2. Are learning by experimenting, manipulating objects in many ways, and using stories to exercise their imaginations at preschool age;
3. Are able to be conforming or nonconforming as the situation demands;
4. Try to find answers to their questions in their way;
5. Have extremely long attention spans and the ability to pursue an activity in which they are interested for extra long periods of time;
6. Can tolerate disorder and ambiguity;
7. Are able to organize themselves and ideas;
8. Tend to see familiar things and situations in unusual ways and in greater depth;
9. Often prefer to learn by creative ways rather than by being told by an authority;
10. Seem to learn considerably from fantasy as it aids in solving their problems of development;
11. Display a positive self-image;
12. Have an attraction toward the unconventional and toward complexity;
13. Seem to rely more on their own evaluations than on others;
14. Come from family backgrounds characterized by lack of overdependence of children on parents and stress of conformity by parents; strong feelings are expressed in the family; both fathers and mothers relate strongly and positively to the child even though the mother is ambivalent in her mothering feelings; more often than not the most creative child is the older sibling; fathers are usually engaged in occupations allowing for autonomy and independence;
15. Build a reputation for having wild or silly ideas, particularly the boys;
16. Display humor, playfulness, and relaxation in their creative products;
17. Wish to work alone at times;
18. Are high academic achievers provided they have a minimum IQ score of around 120;
19. Can integrate opposing impulses such as destructiveness and constructiveness;
20. Select fewer conventional occupations (e.g., lawyer, doctor, professor) and select more unconventional ones (e.g., adventurer inventor, writer).

Characteristics of Able Disadvantaged Pupils

Able disadvantaged pupils evidence superior ability in one or more of the five areas listed below. No pupil is expected to demonstrate ability in all areas, but an analysis of strengths may indicate potential. It is important to note that these characteristics can be evidenced in both positive and negative ways and either manifestation is an indicator of strength. Examples of negative indicators have been enclosed in parenthesis.

The classroom teacher who works daily with pupils is best qualified to make these observations. Place an X on the line beside each statement which BEST describes this pupil. If the behavior has not been observed, leave the line blank.

A. LEARNING	YES	NO
. Demonstrates verbal proficiency in small group problem solving tasks.	___	___
. Has unusually advanced vocabulary for age or grade level.	___	___
. Has verbal behavior characterized by "richness" of expression, imagery, elaboration, and fluency in any language. (Sometimes rambles on and on.)	___	___
. Possesses a large storehouse of information about a variety of topics beyond the usual interests of age peers.	___	___
. Has rapid insight into cause-effect relationships; tries to discover the how and why of things; asks many provocative questions; wants to know what makes things or people "tick". (Can be an annoyance in persisting to ask questions.)	___	___
. Has a ready grasp of underlying principles; can quickly make valid generalizations about events, people or things. (Sometimes skeptical.)	___	___
. Looks for similarities and differences.	___	___
. Reads independently; does not avoid difficult material; may show a preference for biography, autobiography, encyclopedia, atlases, travel, folk tales, poetry, science, history and drama.	___	___
. Tries to understand complicated material by separating it into its respective parts; reasons things out and sees logical and common sense answers.	___	___
. Catches on quickly; retains and uses new ideas and information.	___	___
. Has a facility for learning English if bilingual.	___	___
. Is a keen and alert observer; usually "sees more" or "gets more" out of a story, film, etc. than others.	___	___

KINDERGARTEN CHECK LIST*

1. County_____ 3. School_____

2. District_____ 4. Teacher_____

When compared with other children in the kindergarten, which of your pupils possess, to a marked degree, some of the following characteristics? Be particularly observant of the youngest children in the class. Do not exclude any child because of a speech defect.

1. Has unusually good vocabulary
2. Has ideas which are often very original in one or more areas (i.e., block play, free activities, art, rhythms, sharing)
3. Is alert, keenly observant; responds quickly
4. Has an unusually good memory
5. Has a long attention span
6. Recognizes, on his own, some words in books on the browsing table
7. Uses longer sentences
8. Reasons things out, thinks clearly, recognizes relationships, comprehends meanings.
9. Is curious about many activities and places outside immediate environment and/or experience
10. Is a leader in several kinds of activities. Is able to influence others to work toward desirable goals
11. Has outstanding talent in a special area(s) such as art, music, rhythms, dramatics (indicate area(s) of talent)

_____

_____

If you have any pupils who exhibit at least three of the above characteristics, please list their names below. Following each name, list the number of all characteristics that fit the pupil:

	Pupil's Name	Characteristics (Indicate by number)
1.	_____	_____
2.	_____	_____

*Form developed by Corabelle Clark and Eleanor Dyer, Compton; Lyman Peterson, Paramount; Marguet Lund, Manhattan Beach; Beatrice Lantz, Division of Research and Guidance, Office of Los Angeles County Superintendent of Schools.

Identification of Culturally Disadvantaged Underachieving Mentally Gifted Minors

Suggested by the State Consultants in the Education of the Mentally Gifted[1]

1. Early evidence of:

___ School related learning
___ Maturation
___ Active and persistent exploration of environment
___ Imitation of adult behavior
___ Questioning of established ways of doing things or of assignments and directions

2. Unusually resourceful in coping with:

2.1 Responsibilities

___ Home
___ School
___ Work
___ Community
___ Other
___

2.2 Opportunities

___ Access to resources
___ Free and/or unstructured time
___ New environments
___ New experiences
___ Other
___

2.3 Deprivations

___ Economic
___ Social
___ Expression, information, planning, communication, exploration
___ Cultural
___ Educational

2.4 Problems, Frustrations, and Obstacles

___ School
___ Home
___ Social
___ Other

2.5 Lack of Structure and Direction

___ No closure
___ Poor or irrational organization of:

___ Time
___ Work tasks
___ Learning experiences
___ Social experiences

2.6 Overly structured settings

___ With no or few opportunities to explore alternatives
___ With overemphasis on rigid expectations and with rigid role performance
___ With no or few opportunities to do things in new ways

3. Playful with:

___ Materials
___ People (interpersonal relations)
___ Ideas
___ Other things

4. Sense of humor (describe)
5. Products (describe)
6. Achievements (describe)
7. Skills (describe)
8. Scores on intellectual ability tests
9. Achievement and aptitude test scores

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*Obtained through Dr. Paul Plowman California State Department of Education.

Characteristics of Talented Pupils-Checklist*
(Can be used at any grade level)

	YES	NO
1. Displays a great deal of curiosity about many things.	___	___
2. Generates ideas or solutions to problems and questions.	___	___
3. Sees many aspects of one thing; fantasizes, imagines, manipulates ideas, elaborates.	___	___
4. Applies ideas.	___	___
5. Is a high risk taker; is adventurous and speculative.	___	___
6. Displays a keen sense of humor.	___	___
7. Is sensitive to beauty; attends to aesthetic characteristics.	___	___
8. Predicts from present ideas.	___	___
9. Demonstrates unusual ability in painting/drawing.	___	___
10. Exhibits unusual ability in aculpturing or clay modeling.	___	___
11. Shows unusual ability in handicarfts.	___	___
12. Provides evidences of unusually ability in use of tools.	___	___
13. Shows unusual ability in instrumental music.	___	___
14. Demonstrates unusual ability in vocal music.	___	___
15. Indicates special interest in music appreciation.	___	___
16. Displays ability in role playing and drama.	___	___
17. Demonstrates ability to dramatize stories.	___	___
18. Shows ability in oral expression.	___	___
19. Demonstrates unusual ability in written expression: creating stories, plays, etc.	___	___
20. Shows evidence of independent reading for information and pleasure.	___	___
21. Demonstrates ability in dancing; toe, tap creative.	___	___
22. Displays mechanical interest and unusual ability.	___	___
23. Shows unusual skill and coordination in his gross muscular movements such as ball playing, running.	___	___

* From Dade County Schools, Dade County Florida.

NORWALK CREATIVE CHILD PROGRAM

CRITERIA FOR STUDENT SELECTION IN CREATIVE CHILD PROGRAM

Selection of students for placement in a class based upon developing creativity must already possess most of the important characteristics of the creative individual. While rating sheets are subjective at best, they are the only existing method of comparison available to us at the moment. After reaching some agreement as to the meaning of the terms and characteristics listed below, we shall use a sliding rating scale from 9 - 10, 5 being the average. For example:

ORIGINALITY

Uses sterotypes, copies ideas	Seldom deviates from expected, copies occasionally	Most always has unusual presentation, never copies ideas

0 ——— 5 ——— 10

FLUENCY

Follows one teacher motivated idea	Has several ideas each lesson	Has many ideas in most areas

0 ——— 5 ——— 10

FLEXIBILITY

Never varies from first idea	Changes ideas each lesson	Often changes to new & better ideas

0 ——— 5 ——— 10

COMPLEXITY

Always selects simplest idea	Occasionally selects complex idea	Tends to select difficult, complex ideas

0 ——— 5 ——— 10

VISUAL DRAWING ABILITY

Does not draw well, lacks proportion in figures, etc.	Draws well. Lacks complete detail and composition	Draws extremely well with good detail

0 ——— 5 ——— 10

PERSERVERANCE

Seldom or never completes tasks	Usually completes tasks	Always completes tasks

0 ——— 5 ——— 10

IDENTIFICATION SUGGESTIONS--PERFORMANCE DATA

SCALES

The Renzull-Hartman Scale
for Rating Behavioral Characteristics of Superior Students*

Name _____ Date _____

School _____ Grade ____ Age ____ Yrs. ____ Mos.

Teacher or person completing this form _____

How long have you known this child? _____ Months.

DIRECTIONS. These scales are designed to obtain teacher estimates of a student's characteristics in the areas of learning, motivation, creativity, and leadership. The items are derived from the research literature dealing with characteristics of gifted and creative persons. It should be pointed out that a considerable amount of individual differences can be found within this population; and therefore, the profiles are likely to vary a great deal. Each item in the scales should be considered separately and should reflect the degree to which you have observed the presence or absence of each characteristic. Since the four dimensions of the instrument represent relatively different sets of behaviors, the scores obtained from the separate scales should not be summed to yield a total score. Please read the statements carefully and place an X in the appropriate place according to the following scale of values.

1. If you have seldom or never observed this characteristic.
2. If you have observed this characteristic occasionally.
3. If you have observed this characteristic to a considerable degree.
4. If you have observed this characteristic almost all of the time.

Space has been provided following each item for your comments.

SCORING. Separate scores for each of the three dimensions may be obtained as follows:

Add the total number of X's in each column to obtain the "Column Total."

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*Exceptional Children, Volume 38, Number 3, November, 1971, pp. 211-214, 243-248 and Dorothy F. Syphers, Gifted and Talented Children: Practical Programming for Teachers and Principals. Arlington, Virginia: The Council for Exceptional Children, 1411 South Jefferson Davis Highway, Suite 900. Developers are Dr. Joseph Renzulli, University of Connecticut, and Robert K. Hartman, Darien City Schools, Connecticut. Children with the highest scores on each behavior can be ranked. The behavior scores used in the student profile will be determined by the type of program being established.

Multiply the Column Total by the "Weight" for each column to obtain the "Weighted Column Total."
Sum the Weighted Column Totals across to obtain the "Score" for each dimension of the scale.
Enter the Scores below.

Learning Characteristics....._____

Motivational Characteristics....._____

Creativity Characteristics....._____

Leadership Characteristics....._____

PART I: LEARNING CHARACTERISTICS

	1*	2	3	4
1. Has unusually advanced vocabulary for age or grade level; uses terms in a meaningful way; has verbal behavior characterized by "richness" or expression, elaboration, and fluency.				
2.. Possesses a large storehouse of information about a variety of topics (beyond the usual interests of youngsters his age).				
3. Has quick mastery and recall of factual information.				
4. Has rapid insight into cause-effect relationships; tries to discover the how and why of things; asks many provocative questions (as distinct from information or factual questions); wants to know what makes things (or people) "tick."				
5. Has a ready grasp of underlying principles and can quickly make valid generalizations about events, people, or things; looks for similarities and differences in events, people, and things.				
6. Is a keen and alert observer; usually "sees more" or "gets more" out of a story, film, etc. than others.				
7. Reads a great deal on his own; usually prefers adult level books; does not avoid difficult material; may show a preference for biography, autobiography, encyclopedias, and atlases.				
8. Tries to understand complicated material by separating it into its respective parts; reasons things out for himself; sees logical and common sense answers.				
Column Total				
Weight	1	2	3	4
Weighted Column Total				
TOTAL				

*1--Seldom or never
2--Occasionally
3--Considerably
4--Almost always

PART II: MOTIVATIONAL CHARACTERISTICS

	1	2	3	4
1. Becomes absorbed and truly involved in certain topics or problems; is persistent in seeking task completion. (It is sometimes difficult to get him to move on to another topic.)				
2. Is easily bored with routine tasks.				
3. Needs little external motivation to follow through in work that initially excites him.				
4. Strives toward perfection; is self critical; is not easily satisfied with his own speed or products.				
5. Prefers to work independently; requires little direction from teachers.				
6. Is interested in many "adult" problems such as religion, politics, sex, race--more than usual for age level.				
7. Often is self assertive (sometimes even aggressive); stubborn in his beliefs.				
8. Likes to organize and bring structure to things, people, and situations.				
9. Is quite concerned with right and wrong, good and bad; often evaluates and passes judgment on events, people, and things.				
Column Total				
Weight	1	2	3	4
Weighted Column Total				
TOTAL				

PART III: CREATIVITY CHARACTERISTICS

	1	2	3	4
1. Displays a great deal of curiosity about many things; is constantly asking questions about anything and everything.				
2. Generates a large number of ideas or solutions to problems and questions; often offers unusual ("way out"), unique, clever responses.				
3. Is uninhibited in expressions of opinion; is sometimes radical and spirited in disagreement; is tenacious.				
4. Is a high risk taker, is adventurous and speculative.				

	1	2	3	4
5. Displays a good deal of intellectual playfulness; fantasizes, imagines ("I wonder what would happen if..."); manipulates ideas (i.e., changes, elaborates upon them); is often concerned with adapting, improving, and modifying institutions, objects, and systems.				
6. Displays a keen sense of humor and sees humor in situations that may not appear to be humorous to others.				
7. Is usually aware of his impulses and more open to the irrational in himself (freer expression of feminine interest for boys, greater than usual amount of independence for girls); shows emotional sensitivity.				
8. Is sensitive to beauty; attends to aesthetic characteristics of things.				
9. Is nonconforming; accepts disorder; is not interested in details; is individualistic; does not fear being different.				
10. Criticizes constructively; is unwilling to accept authoritarian pronouncements without critical examination.				
Column Total				
Weight	1	2	3	4
Weighted Column Total				
TOTAL				

PART IV: LEADERSHIP CHARACTERISTICS

	1	2	3	4
1. Carries responsibility well; can be counted to do what he has promised and usually does it well.				
2. Is self confident with children his own age as well as adults; seems confortable when asked to show his work to the class.				
3. Seems to be well liked by his classmates.				
4. Is cooperative with teacher and classmates; tends to avoid bickering and is generally easy to get along with.				
5. Can express himself well; has good verbal facility and is usually well understood.				

	1	2	3	4
6. Adapts readily to new situations; is flexible in thought and action and does not seem disturbed when the normal routine is changed.				
7. Seems to enjoy being around other people; is sociable and prefers not to be alone.				
8. Tends to dominate others when they are around; generally directs the activity in which he is involved.				
9. Participates in most social activities connected with the school; can be counted on to be there if anyone is.				
10. Excels in athletic activities; is well coordinated and enjoys all sorts of athletic games.				
Column Total				
Weight	1	2	3	4
Weighted Column Total				
TOTAL				

SAMPLE STUDENT PROFILES

Composite Student Evaluation Profile*

This form has been developed to compile objective and subjective data on students in deciding placement into gifted and talented classes. Data is converted into a stanine figure.

Roman numeral I is a composite chart of data. Within the chart, numbers are translated into a 1 to 9 stanine.

Block 1 - the IQ stanine
Block 2 - the achievement stanine, paragraph meaning
Block 3 - the achievement stanine, arithmetic conepts
Block 4 - average of all grades for the past two years (C=5, B=7, A=9)
Block 5 - III Motivation: #1=1; #2=3; #3=5; #4=7; #5=9
Block 6 - III Work Attitude: #1=1; #2=3; #3=5; #4=7; #5=9
Block 7 - III Curiosity: #1=1; #2=3; #3=5; #4=7; #5=9
Block 8 - III Creativity: #1=1; #2=3; #3=5; #4=7; #5=9
Block 9 - IV Skills and Maturity: Total the circled number by topics. Translate into a stanine according to the following chart.

Totals	Stanine	Totals	Stanine
121-135	9	61-75	5
106-120	8	46-60	4
91-105	7	31-45	3
76-90	6	0-30	2

Block 10 - Add all stanines in blocks 1 through 9 and place total number in here.

Block 11 - Divide the total number in block 10 by 9 and place the composite stanine here. Local school placement committees will determine the cutoff stanine.

The cutoff stanine (block 11) is compared with V Teacher's Evaluation and VI Past Record in G & T asses (if applicable). The last bit of data (VII) may determine the type of program.

DATE_____

SCHOOL_____ NAME OF STUDENT_____

GRADE_____ TEACHER_____ SUBJECT_____

HOME ADDRESS_____ HOME TELEPHONE_____

PARENTS' INITIALS_____

SCHOOL ASSIGNED FOR NEXT YEAR (19-- 19--)_____

*Developed by Mrs. Betty Stovall, Director, Talent Development Program, Charlotte-Mecklenburg Schools, Charlotte, North Carolina.

I. 1 2 3 4 5 6 7 8 9 10 11

II. TEST RESULTS

Lorge-Thorndike or similar instrument (Stanine Score)_____
(Elementary Grades)

DAT (VR + NA) or similar instrument (Stanine Score)_____
(Secondary Grades)

Stanford Achievement Test or similar instrument (Stanine Scores)
Paragraph Meaning_____ Arithmetic Concepts_____

Average of all grades for Past Two Years----------_____

III. PLEASE DESCRIBE THIS STUDENT BY ENCIRCLING THE MOST ACCURATE DESCRIPTION FOR A-D (If, after encircling the description, you feel it underestimates the pupil, place a + after the encircled number.) These items will be translated into stanines.

A. Motivation	B. Work Attitude	C. Curiosity	D. Creativity
1. Must be prodded to get work done	1. Does not like to tackle a new idea	1. Not curious enough to get all the facts	1. Never has a new idea
2. Requires occasional reminders	2. Has difficulty comprehending class procedures	2. Accepts facts and situations as presented	2. Tends to use only familiar ideas
3. Usually completes work promptly	3. Applies general classroom methods capably	3. Asks some questions for better understanding	3. Sometimes has original ideas
4. Generally does more than is required	4. Occasionally employs a new approach	4. Demands reasons; expresses doubts; wants additional clarification	4. Can be depended on to have a good suggestions
5. Contributes creatively and constructively on a high level	5. Finds many ways to solve problems	5. Investigates further and arrives at conclusions	5. See new relationships; uses materials in unusual ways

IV. Skills and Maturity

PLEASE ENCIRCLE THE NUMBER THAT MOST ACCURATELY DESCRIBES THIS STUDENT'S LEVEL IN EACH OF THE FOLLOWING AREAS: (Consider 9 to be Superior, 5 to be Average, and 1 to be Poor)

FILL IN COMPLETELY

Reading	9	8	7	6	5	4	3	2	1
Paragraph Writing	9	8	7	6	5	4	3	2	1
Grammar	9	8	7	6	5	4	3	2	1
Spelling	9	8	7	6	5	4	3	2	1
Punctuation	9	8	7	6	5	4	3	2	1
Arithmetic Application	9	8	7	6	5	4	3	2	1
Penmanship	9	8	7	6	5	4	3	2	1
Oral Reporting	9	8	7	6	5	4	3	2	1
Critical Judgment	9	8	7	6	5	4	3	2	1
Organization Proficiency	9	8	7	6	5	4	3	2	1
Following Directions	9	8	7	6	5	4	3	2	1
Research Ability	9	8	7	6	5	4	3	2	1
Emotional Maturity	9	8	7	6	5	4	3	2	1
Physical Maturity	9	8	7	6	5	4	3	2	1
Social Maturity	9	8	7	6	5	4	3	2	1

Total Score_____

V. TEACHER' EVALUATION: _____

_____

_____

_____

Do you recommend this student for Gifted and Talented classes? Yes__ No__

VI. PAST RECORD OF ENROLLMENT IN G & T CLASSES

DATE	GRADE	SCHOOL	DATE	GRADE	SCHOOL

VII. Please check the areas in which the student shows unusual interest or talent:

Art	___	Language Arts	___	Music	___	Science	___
Dance	___	Language	___	Physical Education	___	Others	___
Drama	___	Mathematics	___	Social Studies	___	_____	

IDENTIFICATION OF MULTIPLE ABILITIES FOR
STUDENTS OF GIFTED AND TALENTED
PROGRAMS

The Williams Scale

A Teacher-Parent Observational Scale for rating
thinking and feeling characteristics of potentially
gifted and talented students**

Name _____ Date _____ Grade _____

School _____ Age _____
Yrs. Mos.

Teacher or Person Completing This Scale _____

How Long Have You Known This Student _____

DIRECTIONS FOR USE OF THE SCALE:

There are eight (8) observational factors upon which this scale is based. Under each you will find six (6) characteristics for observing a student's behavior within the factor. These are specific ways to look at students who may be gifted and creative. Consider all six characteristics and check as many as apply to your observations of the student. Check the characteristics in this way;

Double check ( ) those items under each of the eight factors if the characteristic is observed most of the time to a considerable degree.

Single check ( ) those items under each of the eight factors if the characteristic is observed only occasionally.

Do not check (leave blank) any item under each of the eight factors if the characteristic is seldom or never observed.

---

1. The student is a FLUENT Thinker:

_____The student who thinks of a number of answers when a question is asked.

_____The student who draws several pictures when asked to only draw one.

_____The student who usually has several ideas about something instead of only one.

_____The student who asks many questions.

_____The student who uses a large number of words when expressing himself or herself.

_____The student who is the fastest worker in the class, who produces more than others do.

**This scale has been researched and designed upon the eight factors of the Williams Cognitive-Affective Interaction Model of student behaviors taken from his TOTAL CREATIVITY PROGRAM kit, Educational Technology Publications, Inc. 140 Sylvan Ave. Englewood Cliffs, New Jersey, 07632.

2. The student is a FLEXIBLE Thinker:

_____The student who thinks of various ways to use an object other than its common use.
_____The student who has different interpretations of a picture, story, poem or problem.
_____The student who can apply a principle or concept in subjects other than the one in which it was introduced.
_____The student who shifts and can take another point of view or considers situations differently from others.
_____The student who will have a variety of ideas without sticking to only one.
_____The student who things of a number of different possibilities for solving a problem.

3. The student is an ORIGINAL Thinker:

_____The student who likes objects in a room placed off-side or prefers asymmetry in drawings and designs.
_____The student who is dissatisfied with the common answer and instead seeks a fresh approach.
_____The student who is a nonconformist and cannot help being different by having a new twist in thinking about things.
_____The student who enjoys the unusual and dislikes doing things the way everyone else does them.
_____The student who after reading or listening to a problem will go to work inventing a new solution.
_____The student who will question the old way and try to figure out a new way.

4. The student is an ELABORATIVE Thinker:

_____The student who will add lines, color, and details to his or another students drawing.
_____The student who senses a deeper meaning to an answer or solution by producing more detailed steps.
_____The student who takes off with someone else's idea and changes it or adds on to it.
_____The student who will want to "jazz up" or embelish upon the work or ideas of others.
_____The student who is not interested in things that are plain and attempts to add details to make them more beautiful or exciting.
_____The student who senses something lacking in his or her production or creation and adds on details to improve them.

5. The student is CURIOUS and INQUISITIVE by nature:

_____The student who questions everything and everyone.

_____The student who loves to explore mechanical things.

_____The student who is constantly searching for new ways or new ideas.

_____The student who continually explores books, games, maps, pictures, etc.
_____The student who needs no real push to explore something unfamiliar and exploration is a natural part of his or her behavior.
_____The student who is sensitive to problems and alert to details that product possible solutions.

6. The student is IMAGINATIVE and can visualize or dream about things that have never happened to him or her:

_____The student who likes to tell stories about places he or she has never been.
_____The student who can predict what someone else has said or done without every knowing that person.
_____The student who dreams about things without ever leaving the room.

_____The student who likes to imagine things he has never seen.

_____The student who can see things in a picture or drawing that no one else has seen.
_____The student who can wonder about something that has never happened

7. The student is COMPLEX by nature and likes to tackle difficult problems or tasks.

_____The student who becomes intrigued with intricate or complicated situations.
_____The student who likes to deive into the most involved task.

_____The student who wants to figure things out for himself or herself without help.
_____The student who enjoys things harder to do than others.

_____The student who thrives on trying again and again in order to gain success.
_____The student who seeks more difficult answers rather than accepting an easy one.

8. The student is COURAGEOUS AND A RISK-TAKER, not afraid of failure or criticism:

_____The student who will defind his or her ideas regardless of what others think.
_____The student who will set high goals of accomplishment and not be afraid of trying to reach them.

What would you like to see accomplished as a result of a student's partic-patio
ipation in a program for the gifted and talented? _____

_____

_____

_____

Scoring and interpreting the Scale:

Add the number of double checked ( ) items and multiply this sum by two (2). These are double weighted items which sould receive two points each.

Add the number of single checked ( ) items. These receive one point (1) each.

The four open-ended questions at the end of the scale receive one (1) point each if answered "yes" with reasons or comments. This is a quantitative score just for being answered, but the quality of the remarks can help those designing programs for the gifted and talented as suggestions of expectations from teacher or parents.

Number of double checked items _____ X 2 = _____

Number of single checked items _____ X 1 = _____

Number of open-ended items answered _____ X 1 = _____

SUM _____

_____
Total Score

Students with the highest scores can be ranked on a scale of 100 since there are a possible 100 points for the total score.

PUPIL INTEREST SURVEY

Below are listed some sample questions to provide insight into the type of questions asked to reveal pupil interests. Renzulli's Interestalizer is a pupil questionnaire form which may be purchased from Creative Learning Press, Wethersfield, Connecticut.

What are your favorite TV programs?

What are your favorite magazines?

What are the best books you have read this year?

Of what clubs and organizations are you a member?

List your favorite recreation. Your hobbies.

Describe any collections you have made.

What job would you like to have when you grow up?

What do you like best about school?

If you had a half day free time how would you like to use it?

SOME SAMPLE ITEMS FROM RENZULLI'S INTERESTALIZER

- Pretend that some day you will be the famous author of a well known book. What type book will it be? (History, fiction, fashion? and what will the book be about?)
- Pretend a new time machine has been invented that allows famous persons from the past to come back to life for a short period of time. If you could invite one of these persons to give a talk to your class who would you invite?
- What are some of the things you would like to collect if you had the time and money?
- Pretend you are an astronaut who has been assigned to take a one-year trip into space. You are allowed to take ten personal possessions (books, games, hobbies, projects) with you to help you spend free time. List the things you would like to take.

Questions such as these would be helpful in exploring 1) the interests of those who have been identified as gifted but are not highly motivated, and 2) those you suspect to be gifted but do not test high on standard measures. Develop your own interest questions. Be creative.

PARENT QUESTIONNAIRE FOR CASE STUDY

Below are some sample items which might be included on a parent questionnaire form for use in identification.

. List ages for the following in months and years:

- Start of talking
- Use of sentences
- First step unassisted
- First walked easily
- Sat without support
- First tooth
- Bladder control fully established
- Bowel control fully established
- Tied shoes unassisted
- Rode tricycle
- Rode bicycle
- First learned to read

. Describe early indications of superiority.

. Medical or health problems during pregnancy of mother or early months or years of child.

. Is the child poorly coordinated? Does he/she have problems with sleeping or rest?

. Does he/she have serious health problems? List any diseases, past or present along with comments about the after effects.

. Father's vocational goal for child.

. Private lessons taken. Trips taken. Things the family does together.

. Child's recreational choices. Choice of playmates?

. How does he/she get along with playmates?

. Preferences when he/she is alone.

. Child's membership in groups in and out of school.

. Child's reading interests. Amount of reading per week.

. Child's hobbies and collections.

. Child's special talents and skills.

. Child's special problems.

. How does child get along at home or elsewhere with others?

. Child's attitude toward school.

. Child's needs as parent sees them.

. Describe child's personality and attitudes toward home, work, friends.

In constructing the form, leave spaces for child's name, birthday, grade and other pertinent information as well as spaces for the parent to write the answers.

Mansfield Public Schools
Pupil Personnel Services
SAGE Program Evaluation
Teacher Ratings of Student Progress*

Name of Child_____ Date_____

School_____ Grade_____

Teacher or person completing this form_____

How long have you worked with child?_____months

This rating form has been designed to help you judge your student's progress toward fulfilling the goals and objectives of the SAGE program. Your careful and honest responses will help us modify the program to better meet the needs of participating teachers and students.

Please return the questionnaires in the enclosed envelope within the next week. We appreciate your cooperation and assistance in helping us to evaluate SAGE.

Thank you.

Jerry Spears

Directions: Please read each statement carefully and place an X in the appropriate place in the column labeled "Accomplishment of Objectives" according to the following scale of values:

1. If you have seldom or never observed this behavior.
2. If you have observed this behavior occasionally.
3. If you have observed this behavior to a considerable degree.
4. If you have observed this behavior almost all of the time.

After you have rated the student's accomplishment of program objectives, please re-read the statements and place an X in the appropriate place in the column labeled "Importance of Objective" according to the following scale of values:

1. If you feel that the objective is not at all important.
2. If you feel that the objective is somewhat important.
3. If you feel that the objective is considerably important.
4. If you feel that the objective is extremely important.

---

* Reva C. W. Jenkins, University of Connecticut, 1978.

	1-Seldom or Never 2-Occasionally 3-Considerably 4-Almost Always				1-Not At All 2-Somewhat 3-Considerably 4-Extremely			
Student Objective	Accomplishment of Objective				Importance of Objective			
Interest Development and Exploration[1]	1	2	3	4	1	2	3	4
1. Explores subjects not normally covered by the regular program	—	—	—	—	—	—	—	—
2. Pursues topics in greater depth than is usually possible in the regular program	—	—	—	—	—	—	—	—
3. Identifies individual interest areas which can be pursued in greater depth than is usually possible in the regular program	—	—	—	—	—	—	—	—
Problem Solving Skills								
1. Identifies problems	—	—	—	—	—	—	—	—
2. Analyzes problems	—	—	—	—	—	—	—	—
3. Generates possible solutions	—	—	—	—	—	—	—	—
4. Collects pertinent information	—	—	—	—	—	—	—	—
5. Predicts results or consequences of applying this solution	—	—	—	—	—	—	—	—
6. Defends conclusion	—	—	—	—	—	—	—	—
7. Evaluates final results	—	—	—	—	—	—	—	—
Grade-Appropriate Advanced Research Techniques								
1. Uses multiple written resources	—	—	—	—	—	—	—	—
2. Uses multiple non-written resources	—	—	—	—	—	—	—	—
3. Evaluates validity of resources	—	—	—	—	—	—	—	—
4. Extracts pertinent information	—	—	—	—	—	—	—	—
5. Applies information to topic study	—	—	—	—	—	—	—	—
6. Communicates results effectively	—	—	—	—	—	—	—	—

[1] For purposes of this questionnaire, "Exploration" is defined as becoming familiar with a topic or field.

Student Objective	Accomplishment of Objective (1-Seldom or Never, 2-Occasionally, 3-Considerably, 4-Almost always)				Importance of Objective (1-Not At All, 2-Somewhat, 3-Considerably, 4-Extremely)			
Independence	1	2	3	4	1	2	3	4
1. Takes initiative for choosing at least one area for indepth study	—	—	—	—	—	—	—	—
2. Takes initiative for planning at least one indepth study	—	—	—	—	—	—	—	—
3. Follows through on responsibilities	—	—	—	—	—	—	—	—
4. Demonstrates flexibility, resourcefulness and persistence in independent work	—	—	—	—	—	—	—	—
Creative Thinking								
1. Generates and states ideas and insights	—	—	—	—	—	—	—	—
2. Recognizes more than one solution of a problem	—	—	—	—	—	—	—	—
3. Displays fluency, flexibility, elaboration and originality when responding to a question or topic	—	—	—	—	—	—	—	—
Critical Thinking								
1. Examines all possibilities prior to decision making	—	—	—	—	—	—	—	—
2. Analyzes, interprets and evaluates own idea	—	—	—	—	—	—	—	—
3. Analyzes, interprets and evaluates others' ideas	—	—	—	—	—	—	—	—
4. Supports or justifies decisions	—	—	—	—	—	—	—	—
Affective Skills								
1. Accepting of self	—	—	—	—	—	—	—	—
2. Accepting of others	—	—	—	—	—	—	—	—
3. Works cooperatively with other students on projects	—	—	—	—	—	—	—	—
4. Shares information and ideas with a group of students	—	—	—	—	—	—	—	—

Would you recommend that this child be invited to participate in a program of this type next year? Why or why not?

Parent Interview

Disregarding test results, would you rate your child?

Check the column which best describes your child's intellectual functioning for his/her age level. These items include a range of possible characteristics or objectives. A child is not expected to be high on all of them.

NOTE: Adapted from - The Identification of the Gifted and Talented by Ruth Martinson, 1975.

Item to be evaluated	Little 1	2	Moderate 3	4	Much 5
1. Knowledge and skills (Possesses a comfortable knowledge of basic skills and factual information)	____	____	____	____	____
2. Concentration (has ability to concentrate; is not easily distracted)	____	____	____	____	____
3. Enjoyment of learning (likes doing)	____	____	____	____	____
4. Persistence (has ability and desire to follow through on work; concerned with competition; able to see a problem through)					
In own interests.....	____	____	____	____	____
In assigned tasks....	____	____	____	____	____
5. Responsive (is easily motivated; responsive to adult suggestions and questions)	____	____	____	____	____
6. Intellectual curiosity (pursues interests primarily to understand or satisfy curiosity; questions the common, ordinary, or the unusual; wants to know how and why; generates questions of his own, in connection with personal interests or group concerns)	____	____	____	____	____
7. Challenge (Enjoys the challenge of difficult problems, tasks, issues, and materials)	____	____	____	____	____
8. Perceptiveness (Is alert, perceptive, and observant beyond his years; aware of many stimuli)	____	____	____	____	____

Item to be evaluated	Little 1	2	Moderate 3	4	Much 5
9. Verbal facility (Shows marked facility with language; uses many words easily and accurately)	____	____	____	____	____
10. Fluency of ideas (Produces a large number of ideas or products, often very quickly)	____	____	____	____	____
11. Flexibility (Is able to approach ideas and problems from a number of perspectives; adaptable; able to find alternative ways of solving problems)	____	____	____	____	____
12. Sensitivity to problems (Perceives and is aware of problems that others may not see; is ready to question or change existing situations and suggest improvements)	____	____	____	____	____
13. Originality (Often uses original methods of solving problems, is able to combine ideas and materials in a number of ways, or create products of unusual character or quality)	____	____	____	____	____
14. Imagination (Can freely respond to stimuli with the production of mental images; may "play" with ideas or produce remote, fanciful associations or insights)	____	____	____	____	____
15. Reasoning (Is logical, often generalizes or applies understanding in new situations, expands concepts into broader relationships, or sees parts in relation to the whole)	____	____	____	____	____
16. Scientific method (Can define problems, formulate hypotheses, test ideas, and arrive at valid conclusions)	____	____	____	____	____
17. Independence in thought (Inclined to follow his organization and ideas rather than the structuring of others)	____	____	____	____	____
18. Independence in action (Able to plan and organize activities, direct action, and evaluate results)	____	____	____	____	____

Item to be evaluated	Little 1	2	Moderate 3	4	Much 5
19. Independence and work habits (Requires a minimum of adult direction and attention)					
20. Elaboration (Concerned with detail and complexity; often involved with a variety of implications and consequences)	____	____	____	____	____
21. Aesthetic appreciation (enjoys and is responsive to beauty in the arts or nature)	____	____	____	____	____

22. Describe any unpredictable behavior which interferes with play; e.g. wandering away without apparent purpose:

_____
_____
_____
_____

23. Describe any learning characteristics which seem outstanding or would especially facilitate this child's progress in a challenging educational program:

_____
_____
_____
_____

24. Describe any learning difficulties the child might have in particular areas - difficulties which could affect progress in such a program:

_____
_____
_____
_____

25. Describe any examples of the child's creative productivity:

_____
_____
_____
_____

SOME TESTING INSTRUMENTS

ALPHA BIOGRAPHICAL INVENTORY. Three hundred multiple-choice items assess potential for scientific creativity in high school students. Available from The Institute for Behavioral Research in Creativity.

ANALYSIS OF LEARNING POTENTIAL, by Walter N. Durost, Eric F. Gardner, Richard Madden and George Prescott. An intelligence test which includes a battery of 5 group test covering grades 1-12 for measuring general intelligence or scholastic aptitude.

BIOGRAPHICAL INVENTORY, by C.E. Shaefer. The one hundred twenty-five multiple-choice items assess biographical information and creativity-related activities in areas of family history, a vocational activities, and miscellaneous. Available from Educational & Industrial Testing Service.

CALIFORNIA ACHIEVEMENT TESTS, by Ernest W. Tiogs and Willis W. Clark. Achievement tests providing 11 or 12 scores: reading, (vocabulary, comprehension, total) mathematics (computation, concepts, and problems total) language (auding (level 1 only), mechanics, usage, and structure, total spelling), total. McGraw-Hill.

CALIFORNIA PSYCHOLOGICAL INVENTORY (CPI), by H.G. Gough. Measures folk-concepts of interpersonal behavior that are relative to social interaction, stressing the healthy rather than pathological aspects in behavior and personality. Provides measures of (1) poise, ascendency, and self-assurance, (2) socialization, maturity, and responsibility, (3) achievement, potential, and intellectual efforts, (4) intellectual and interest modes. Available from Consulting Psychologists Press, Inc.

CALIFORNIA TEST OF MENTAL MATURITY, by Elizabeth T. Sullivan, Willis W. Clark and Ernest W. Tiegs. Intelligence test providing 8 scores: logical reasoning, spatial relationships, numerical reasoning, verbal concepts, memory, language total, non-language total, total. (K-adult) approximately 90 minutes provides deviation I.Q.

CREATIVE PROBLEM-SOLVING IN ARCHITECTURE TEST BATTERY, by G.T. Moore & L.M. Jay. Assesses level of creative problem-solving in architecture and allied disciplines. Available from Architectural Experimental Laboratory, University of California.

CREATIVITY TEST (FORM H), by C.H. Lawshe & D.H. Harris. Twenty item test to determine fluency, flexibility, and originality. Available from Purdue University.

DECORATION (DEC), by S. Gardner, A. Gershon, P.R. Merrifield & J.P. Guilford. A measure of the ability for divergent production of figural implications, an ability parallel to one previously called (elaboration" which is the ability to add meaningful details to what is given. Given outlines of well known articles of furnishings, the examinee is to add decorative lines. Artistic quality is not important figural ideas are. High school through college and adult levels. Available from Sheridan Psychological Services, Inc.

DIFFERENTIAL APTITUDE TESTS, by G.K. Bennett, H.G. Seashore, A.G. Wesman. An integrated battery of aptitude tests for junior and senior high schools. Provides a profile of the relative strength and weaknesses of each student in these 8 abilities; Verbal reasoning, Numerical ability, Abstract reasoning, Space relations, Mechanical reasoning, Clerical speed and accuracy, Language usage: Spelling, Grammar. Available from The Psychological Corporation.

EXPRESSIONAL FLUENCY (EF), by P.R. Christensen & J.P. Guilford. A measure of the factor of divergent production of semantic systems defined as the ability to produce efficiently appropriate verbal expressions of organized thought. Jr. high school through college and adult levels. Available from Sheridan Psychological Services, Inc.

FLANAGAN APTITUDE CLASSIFICATION TEST NO. 18--INGENUITY, by J.C. Flanagan. Measures creativity or inventiveness. Each test item contains a description of a problem situation similar to one that might be encountered in life. Aspects of the solution are given, but the key word or words which include the crucial ideas are left blank, requiring the individual to think of an ingenious solution. The five choices are given in terms of the first and last letters of the possible right answer, so the individual really develops the solution. Designed primarily for high school students. Available from Science Research Associates.

GUILFORD - ZIMMERMAN INTEREST INVENTORY (GZII), by J.S. Guilford & W.S. Aimmerman. An interest inventory based upon factor analytic findings providing ten extremely homogeneous scales which comprehensively cover broad areas of interest: mechanical (manipulative, constructive), natural (outdoor), aesthetic (appreaciation), service (social welfare: helping others), clerical (business detail), mercantile (business: merchandising), leadership (administrative; persuasive), literary (verbal), scientific (investigating; experimental), and creative (covering all areas where uniqueness or inventiveness plays a role). High school, college and adult levels. Available from Sheridan Psychological Services, Inc.

HENMON-NELSON TESTS OF MENTAL ABILITY, by Tom A. Lamke & M.J. Nelson. If a single predictor of school success is needed which can be given in less than a class period and scored with a minimum of time and effort, this might be the test to use. Includes 90 items with heavy emphasis on verbal content. Items are arranged in omnibus cycle for--different types recur regularly and in each new cycle with increasing difficulty. Available through Houghton Mifflin.

IDEATIONAL FLUENCY I (IF), by P.R. Christensen & J.P. Guilford. A measure of the factor of divergent production of semantic units requiring the examinee to produce efficiently many ideas fulfilling meaningful specifications. Jr. high school through college and adult levels. Available from Aheridan Psychological Services, Inc.

IOWA TESTS OF BASIC SKILLS, under the direction of E.F. Lindquist and A.N. Hieronymns. Tests devised to test functional skills of children in grades 9-12 in the areas of vocabulary, reading comprehensions, language skills, work study skills and arithmetic. Grade norms and percentile norms within grade are provided. 279 minutes in a 4 sessions. Houghton Mifflin Co.

KUHLMANN- ANDERSON MEASURE OF ACADEMIC POTENTIAL, by F. Kuhlmann, R.G. Anderson. Measure of general learning ability or academic potential. (K-12) Deviation I.Q. percentiles, stanines. 50-60 minutes.

LORGE-THORNDIKE INTELLIGENCE TESTS, by Irving Lorge, Robert L. Thorndike and Elizabeth Hagen. Provides 3 scores: verbal, nonverbal, composite. Early administered and scored. Time: 90 minutes. Multi-level edition, grades 3-13. Available through Houghton Mifflin Co.

MAKING OBJECTS (MO), by S. Gardner, A. Gershon, P.R. Merrifield & J.P. Guilford. A measure of the factor of divergent production of figural systems, this test is parallel to those measuring expressional fluency in the verbal or semantic category. The factor might be called "figural expressional fluency," or more precisely, "visual-figural expressional fluency." Given a collection of very simple figural elements, the examinee is told to construct specified objects by combining those elements. Jr. high school through college and adult levels. Available from Sheridan Psychological Services, Inc.

METROPOLITAN ACHIEVEMENT TESTS. Long test (up to 4 hrs.). Tests include: word knowledge, reading, spelling, language, language skills, arithmetic computations and concepts, social studies and science.

MILLER ANALOGIES TEST, by W. . Miller. Single-score test of high difficulty level, originally designed to measure scholastic aptitudes at graduate school level. Also useful in the selection of individuals for high level positions in business. Available from The Psychological Corporation.

MYERS-BRIGGS TYPE INDICATOR (MBTI), by Isabel Myers-Briggs. A test of cognitive styles and personalities. Types based largely on Carl G. Jung's theory of psychological attitudes, functions, and types. Provides measures of two basic attitudes--introversion and extroversion; with a preference for preceiving and judging; of the relative strength of two opposed perceiving functions--sensation and intuition and of two opposing judging functions--thinking and feeling. Also identified as a subject's personality type in the Jung frame of reference. Available from Educational Testing Service.

NEW USES (NU), by R. Hoepfner & J.P. Guilford. A measure of the structure-of-intellect ability of convergent production of semantic transformations; a redefinition ability. A low score on this test probably indicates "functional fixedness, which serves as an inhibitor in problem-solving, preventing insights. High school, college, and adult levels. Available from Sheridan Psychological Services, Inc.

OMNIBUS PERSONALITY INVENTORY (FORM F). Requires response to three hundred and eighty-five true-false items. Provides scores on fourteen scales. The following scales appear to be most useful in studying the creative person: Thinking Introversion, Theoretical Orientation, Estehticism, Complexity, and Autonomy. Available from The Psychological Corporation.

OPINION, ATTITUDE, AND INTEREST SURVEY (OAIS). Questionnaire keyed for several traits, including creative ability and potential (Creative Personality (CP) Scale). Available from OAIS Testing Program.

OTIS-LENNON MENTAL ABILITY TEST, by Arthur T. Oti & Roger T. Lennon. Measure of general ability of scholastic aptitude. Brief test 30-45 minutes for all ages K-12. Provides IQ's percentile ranks and stanines by age and grade. Available through Western Psychological Services.

16 PERSONALITY FACTORS TEST. High score shows the type of personality which is creative and inventive in any area in which he possesses the ability and training that is, the general tendency to work creatively in science, literature, art, or the every-day job, etc., regardless of field. Available from The Institute of Personality and Ability Testing.

PERTINENT QUESTIONS (PQ), by R.M. Berger & J.P. Guilford. A measure of the factor of conceptual foresight, or cognition of semantic implications the ability to see implications of a meaningful kind, as in having anticipations, in being aware of consequences and in making predictions. High school, college, and adult levels. Available from Sheridan Psychological Services, Inc.

PLOT TITLES (PT), by R.M. Berger & J.P. Guilford. A measure of two factors: ideational fluency (divergent production of semantic units) and originality (divergent production of semantic transformations). The former was defined under Ideational Fluency. The latter is seen in the efficient production of ideas of high quality with respect to the criterion of "cleverness." High school, college and adult levels. Available from Sheridan Psychological Services, Inc.

POSSIBLE JOBS (PJ), by A. Gershon-& J.P. Guilford. A measure of the factor of divergent production of semantic implications, the ability to elaborate upon given information or to suggest alternative deductions or extensions. Jr. high school through college and adult levels. Available from Sheridan Psychological Services, Inc.

PROJECT TALENT CREATIVITY TEST. Measures creativity or inventiveness. Each test item contains a description of problem situation similar to one that might be encountered in life. Aspects of the solution are given, but the key word or words which include the crucial ideas are left blank requiring the individual to think of an ingenious solution. The five choices are given in terms of the first and last letter of the possible right answer, so the individual really develops the solution. Designed primarily for high school students. University of Pittsburgh, 1960.

REMORE ASSOCIATES TEST, by S.A. Mednick & M.T. Mednick. Measures ability to think creatively based on associative" interpretation of the creative thinking process-an interpretation which envisions the process as one of seeing relationships between seemingly "mutually remote" ideas and approach to various problems and allows demonstration of creative problem solutions. Available from H.J.P. Schubert.

RUNNER STUDIES OF ATTITUDE PATTERNS (INTERVIEW FORM III). Quite consistently, the Freedom Orientation Scales have correlated positively and the Control Orientation Scales have correlated negatively with measures of creative behavior. Available from Runner Associates.

SEEING PROBLEMS (SP), by P.R. Merrifield & J.P. Guilford. A measure of the factor cognition of semantic implications. Jr. high school through college and adult levels. Available from Sheridan Psychological Services, Inc.

SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS, by Cooperative Test Division Educational Testing Service. STEP are designed to measure the outcomes of educational experiences, both formal and informal, from elementary school to college. Tests for communication (separate tests for reading, writing, essay writing, & listening) science, mathematics and social studies. Authors emphasize utilization of learned skills in solving new problems.

SIMILE INTERPRETATIONS (SIM), by P.R. Christenson, J.P. Guilford & R. Hoepfner. A measure of the factor of divergent production of semantic systems which was defined under Expressional Fluency. High school, college and adult levels. Available from Sheridan Psychological Services, Inc.

SKETCHES (SKET), by A. Gershon, S. Gardner & J.P. Guilford. A measure of the ability known as figural units: the ability to product efficiently a variety of units or visual-figural information in response to specifications. Four basic, simple figures are given, each repeated twelve times, the examinee's task being to make each one into a recognizable object. Jr. high school through college and adult levels. Available from Sheridan Psychological Services, Inc.

SLOSSON INTELLIGENCT TEST, by Richard L. Slosson. A brief (10-20 min.) individual test of intelligence designed to be used by relatively untrained examiners as well as qualified professionals in working with both children and adults. The SIT is designed to provide screening information and when used for this purpose can be a useful tool in selecting individuals for more comprehensive evaluation of mental ability. Available from Slosson Educational Publications.

SOUNDS AND IMAGES, by B.F. Cunnington & E. Paul Torrance. Familiar and obscure sounds on 33 1/3 rpm record elicit associations which may be scored for originality. Available from Personnel Press, Inc.

STANFORD ACHIEVEMENT TEST, by Truman L. Kelley, Richard Madden, Eric F. Gardner, Herbert C. Rudman. There are batteries at five levels K-12. Includes subtests such as Language, Arithmetic, Social Studies, Reading and Spelling. Long (90 min. to 5 hrs.) depending on which level.

STANFORD-BINET INTELLIGENCE SCALE (1938 MM yearbook) Ages 5 and over: an item classification system for use by school psychologists in analyzing and reporting performance in 6 categories: general comprehension, visual motor ability, arithmetic reasoning, memory and concentration, vocabulary and verbal fluency, judgement and reasoning.

STARKWEATHER FORM BOARD'S TEST. Consists of four form boards picturing scenes familiar to most children of pre-school age. The scoring of this test indicates the relationship between the child's conforming and non-conforming responses. Requires special apparatus. Available from Elizabeth Starkweather.

STARKWEATHER ORIGINALITY TEST. Predicts originality independently of verbal ability. Requires special apparatus. Available from Elizabeth Starkweather.

STARKWEATHER TARGET GAME. Designed to measure young children's willingness to try difficult tasks. Special apparatus required. Available from Elizabeth Starkweather.

TESTS OF CONCEPT UTILIZATION, by Richard L. Craget, Ph.D. New clinical instrument used to assess 5 areas of conceptual thinking: Color; Shape; Relational function; Homogeneous functions; and Abstract function. Administered in 10 minutes. Correlations are provided between various conceptual abilities and greade point averages (grade 1-12).

TORRANCE TESTS OF CREATIVE THINKING, by E. Paul Torrance, Ph.D. Assesses 4 mental characteristics important to creative thinking ability: Fluency, Flexibility, Originality, and Elaboration. Presented in 2 test booklets. 1. Figural which requires drawing responses, group test (k-adult) 45 minutes. 2. Verbal requires written responses. 60 minutes.

TORRANCE TESTS OF THINKING CREATIVELY WITH PICTURES (FORMS A & B), by E. Paul Torrance. Contain three subtests which require individual to draw pictures which elaborate upon (a) a single brightly colored form, (b) ten incomplete line drawings, and (c) thirty-six identical circles (or pairs of parallel lines). Available from Personnel Press, Inc.

TORRANCE TESTS OF THINKING CREATIVELY WITH WORDS (FORMS A & B), by E. Paul Torrance. Contain seven subtest which require individual to (a) ask questions about an unusual picture, (c) guess consequences of the action in the picture, (d) think of ideas for improving a stuffed toy monkey or elephant, (e) list unusual uses for cardboard boes or tine cans, and (f) predict consequences of an improbable event. Available from Personnel Press, Inc.

UTILITY TEST (UT), by R.C. Wilson, P.R. Merrifield & J.P. Guilford. A measure of both ideational fluency (divergent production of semantic classes), which requires the examinee to conceive of new and unusual uses for familiar objects based on as wide a variety of attributes of the objects as possible. High school, college and adult levels. Available from Sheridan Psychological Services Inc.

WECHSLER INTELLIGENCE SCALE FOR CHILDREN, by David Wechsler. 13-15 scores: Verbal (information, comprehension, arithmetic, similarities, vocabulary, digit span (optional), total) performance, (picture completion, picture arrangement, block design, object assembly, mazes (optional), coding, total). The WISC is currently the best available compendium of individually administered subject comparison techniques purporting to measure intelligence. Ages 5-15.

WELSH FIGURE PREFERENCE TEST, including the Barron-Welsh Art Scale. Requires reaction to four hundred figues varying on several dimensions. In addition to the original scales, factor analytic studies recently completed may increase the usefulness of this instrument. Available from Consulting Psychologists Press.

WORD FLUENCY (WF), by P.R. Christensen & J.P. Guilford. A measure of divergent production of symbolic units requiring the examinee to produce rapidly words fulfilling specified symbolic (letter) properties. Jr. high school through college and adult levels. Available from Sheridan Psychological Services, Inc.

Appendix

A List of Representative Tests for the Six U.S.O.E. Talent Areas*

U.S.O.E. Talent Area I: General Intellectual Ability

Title of Instrument	Age Range	Scores	Time	Publisher[1]	MMY or TIP[2] Ref.
INDIVIDUAL TESTS					
Peabody Picture Vocabulary Test (PPVT)	2 1/2 - 18 years	Mental Age, Deviation I.Q.	10 - 15 min.	American Guidance Service	7:417
Progressive Matrices (Raven)	5 years and over	Percentiles	60 min.	Psychological	7:376
Slosson Intelligence Test (SIT)	2 weeks and over	Mental Age, I.Q.	30 min.	Slosson Educational Publications Dublin, N.W. 03444	7:424
Stanford Binet Intelligence Scale	2 - 18 years	Mental Age, I.Q.	30 - 90 min.	Houghton-Mifflin Company	7:425
Wechsler Adult Intelligence Scale	16-64 years	Verbal I.Q. Performance I.Q. Full Scale I.Q.	60 - 90 min.	Psychological Corporation	7:429
Wechsler Intelligence Scale for Children - Revised (WISC)	6 - 16 years	Verbal I.Q. Performance I.Q. Full Scale I.Q.	60 - 90 min.	Psychological Corporation	7:431

[1] A list of the test publishers follows.

[2] MMY reference is the Mental Measurements Yearbooks volume and entry number for the latest review of the test listed.

TIP refers to Tests in Print II. It is recommended that MMY and TIP citations be reviewed before an instrument is used.

Prepared by Ron Rubenzer, Teachers College, Columbia University, New York, New York 1978.

Title of Instrument	Age Range	Scores	Time	Publisher	MMY or TIP Ref.
Wechsler Primary and Preschool Scale of Intelligence (WPPSI)	4-6 1/2 years	Verbal I.Q. Performance I.Q. Full Scale I.Q.	60 - 90 min.	Psychological Corporation	7:434
GROUP TESTS	**Grade Range**	**Scores**	**Time**	**Publisher**	**MMY or TIP Ref.**
California Tests of Mental Maturity 1963 Revision (CTMM)	4 - 16	Standard Score	90 min.	California Test Bureau	7:338
Lorge-Thorndike Intelligence Tests	K-12	Verbal and Non-verbal Deviation I.Q. Age, grade percentiles	K - 3rd = 35 min. 4 - 12th= 90 min.	Houghton-Mifflin Company	7:360
Otis-Lennon Mental Ability Test	K - 16	Deviation I.Q. Percentiles & Stanines	30 min.	Harcourt, Brace & World	7:370
Short Form of Academic Aptitude	1.5 - 12	Verbal and Non-verbal Total	30 - 45 min.	CTB/McGraw-Hill Book Co. 330 W. 42nd St. New York, N.Y. 10036	7:387

U.S.O.E. Area II: Specific Academic Aptitude

Title of Instrument	Grade Range	Scores	Time	Publishers	MMY or TIP Ref.
INDIVIDUAL TESTS					
Gates-MacGinitie Reading Tests	K - 12	Vocabulary-comprehension	120 min. (8 sub-tests)	Teachers College Press	7:689
Key Math Tests	K - 7	15 scores involving content, operations, applications	30	American Guidance Service	721 TIP

Title of Instrument	Grade Range	Scores	Time	Publishers	MMY or TIP Ref.
Metropolitan Readiness Tests	K - 1	7 or 8 scores	75 min.	Harcourt, Brace & World	7:757
Peabody Individual Achievement Test (PIAT)	K - 12	6 scores - math, reading comp., spelling, gen. info. total	30 - 40 min.	American Guidance Service	7:17
Woodcock Reading Mastery Test	K - 12	6 scores - letter and work ident., word attach, word comp., passage comp. total	45 min.	American Guidance Service	1656 (TIP)
GROUP TESTS					
Iowa Tests of Basic Skills	3 - 9	Grade Equivs., Percentiles and others	279 min. (4 sessions)	Science Research Associates	6:13
Metropolitan Achievement Test	1 - 12	Grade Equivs., Percentiles and others	227-316 min. (in sessions)	Harcourt, Brace & World	7:14
Sequential Tests of Educational Progress (STEP)	4 - 14	Grade Equivs., Percentiles and others	240 min. (3 sessions)	Educational Testing Service (Cooperative Test Division)	6:25
Stanford Achievement Test	1 - 12	Grade Equivs., Percentiles and others	303 min. (in sessions)	Harcourt, Brace & World	7:25

Title of Instrument	Grade Range	Scores	Time	Publishers	MMY or TIP Ref.
TEACHER SCREENING DEVICES					
Cupertino School District, Extended Learning Program: Screening and Nomination Form	K - 12	Weighted scores in cognitive & non-cognitive areas.	Not indicated	Programs for Gifted Students Educational Improvement Center Woodbury Glassboro Road - Box 426 Pitman, N.J. 08071	
Multi-Dimensional Screening Device (MDSD)	2 - 7	Numerical rating in 10 talent areas Appropriate for disadvantaged.	2 - 3 hrs. whole class	Bella Kranz Fairfax County Public Schools 10700 Page Ave. Fairfax, Va. 22030	
Reservoir Model for Identification of the Gifted and Talented	K - 12	A general screening process.	Not indicated	Gowan, J.C. "How to Identify Students for a Gifted Child Program", Gifted Child Quarterly, XIX, (3), 1975, 260-263.	
Renzulli-Hartman Scales for Rating the Behavioral Characteristics of Superior Students	K - 12	Numerical rating in 10 talent areas.	Not indicated.	Joseph Renzulli Creative Learning Press 530 Silas Deane Highway Wethersfield, Ct. 06109	

U.S.O.E. Area III: Creative Productive Thinking

Title of Instrument	Grade Range	Scores	Time	Publishers	Ref.
INDIVIDUAL TESTS					
Creativity Tests for Children (CTC)	4 - 6	10 tests - measures Guilford' divergent production abilities.		Sheridan Psychological Services	554 (TIP)

Title of Instrument	Grade Range	Scores	Time	Publishers	MMY or TIP REF.
Remote Associates Test (RAT)	9 - 16, and adults	Measures ability to think creatively	40 - 45 min.	Houghton-Mifflin Co.	7:445
Torrance Tests of Creative Thinking	K - Grad. School	Verbal & Pictorial scores in fluency flexibility, originality, & elaboration	Verbal - 60 min. Nonverbal - 45 min. (can be given without time constraints)	Personnel Press 20 Nassau St. Princeton, N.J. 08540	7:448
GROUP TESTS					
Alpha-Biographical Inventory	9 - 12	Creativity; Academic performance in College.	90 - 120 min.	Prediction Press P.O. Box 298 Greensboro, N.C. 27402	7:975
The Adjective Check List	9 - 16 and adults	24 scores related to creativity	15 - 20 min.	Consulting Psychologists Press, Inc.	7:38

U.S.O.E. Area IV: Leadership Ability

Title of Instrument	Grade Range	Scores	Time	Publishers	MMY or TIP Ref.
INDIVIDUAL TESTS					
Personal Interview Techniques	9 - 12			Research and Guidance Laboratory University of Wisconsin Madison, Wisconsin Education Science I Bldg. 1025 W. Johnson Street Madison, Wisconsin	

Title of Instrument	Grade Range	Scores	Time	Publishers	Ref.
GROUP TESTS					
Leadership scale of the Multi-dimensional Screening Device	REFER TO SPECIFIC ACADEMIC APTITUDE SECTION.				
Leadership scale of the Scales for Rating the Behavioral Characteristics of Superior Students	REFER TO SPECIFIC ACADEMIC APTITUDE SECTION.				
	U.S.O.E. Area V: Visual and Performing Arts				
INDIVIDUAL TESTS					
Music: Seashore Measure of Musical Talents, Revised Edition	4 - 16	6 scores - pitch, loudness, rhythm, time, timbre, tonal measure	60 min.	Psychological Corp.	6:353
Art: Horn Art Aptitude Inventory	12 - 16, and adults	scribbling and doodling, and imagery.	50 min.	Horn-Stoelting Co. 1350 South Kostner Avenue. Chicago, Ill. 60623	5:242
Meier Art Tests	7 - 16, and adults	Percentile Norms for Art Judgment Aesthetic Perception	60 min.	Bureau of Educational Research and Service University of Iowa Iowa City, Iowa 25240	7:240

U.S.O.E. Area VI: Psychomotor Ability

Title of Instrument	Grade Range	Scores	Time	Publishers	Ref.
INDIVIDUAL TEST					
Performance Scale I.Q.'s of the Wechsler Series	REFER TO GENERAL INTELLECTUAL ABILITY (INDIVIDUAL TESTS)				
GROUP TESTS					
Guilford Zimmerman Aptitude Survey	9 - 16 and adults	7 aptitude areas investigated	163 min. (7 tests)	Sheridan Psychological Services	6:772
Differential Aptitude Tests	8 - 12	Stanines and Percentiles	240 min. (2-6 sess.)	Psychological Corp.	7:673

Selected Test Publishers

American Guidance Service, Inc., Publishers' Building, Circle Pines, Minn. 55014.

California Test Bureau, Del Monte Research Park, Monterey, Calif. 93940.

Educational Testing Service, Princeton, N.J. 08540.

Harcourt, Brace & World, Inc., 757 Third Avenue, New York, N.Y. 10017.

Houghton Mifflin Company, 110 Tremont Street, Boston, Mass. 02107.

Psychological Corporation, 304 East 45th Street, New York, N.Y. 10017.

Science Research Associates, Inc., 259 East Erie Street, Chicago, Ill. 60611.

Sheridan Psychological Services, P.O., Box 837, Beverly Hills, Calif. 90213.

Teachers College Press, Teachers College, 525 West 120th Street, New York, N.Y. 10027.

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